

The **Communicator**

September/October 2019



A Publication Of Surrey Amateur Radio Communications



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The Communicator is a publication of Surrey Amateur Radio Communications.

It appears bi-monthly, on odd-numbered months, for area Amateur Radio operators and beyond, to enhance the exchange of information and to promote ham radio activity.

During non-publication months we encourage you to visit the Digital Communicator at ve7sar.blogspot.ca, which includes recent news, past issues of The Communicator, our history, photos, videos and other information.

To subscribe, unsubscribe or change your address for e-mail delivery of this newsletter, notify [communicator @ ve7sar.net](mailto:communicator@ve7sar.net)

Regular readers who are not SARC members are invited to contribute a \$5 annual [donation](#) towards our Field Day fund via [PayPal](#).

SARC maintains a website at www.ve7sar.net



On the cover is a photo of the SARC-SEPAR Field Day take-down crew. Many thanks to those here, and others, who made this another successful Field Day.

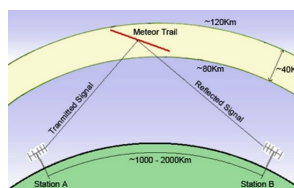
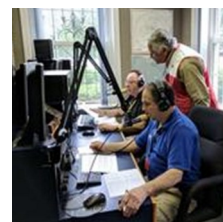
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THIS MONTH

Are we sensitive to our customers' expectations?



Working Meteor Scatter

In Radio Ramblings this month, Kevin VE7ZD provides an in-depth look at how he did it and how you can too.



QRM

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...from the Editor's Shack

*Do you have a photo or bit of SARC news to share?
An Interesting link?*

*Something to sell or something you are looking for?
eMail it to [communicator at ve7sar.net](mailto:communicator@ve7sar.net) for inclusion in this publication.*

September is the month when it all starts up again for Surrey Amateur Radio Communications. At SARC we have a new Executive and they are planning an interesting meeting schedule for the coming year.

At our Annual General meeting in June, several new Directors were elected. Myself, John Brodie and Robert Fishwick stepped down. In my case, my personal commitments and family affairs meant something had to give.

The three new Directors and their portfolios are Jason Biggin VA7ITJ (Surrey Emergency Program Amateur Radio Liaison), Don Hamilton VA7GL (Public Service Group Chair) and Steve McLean VE7SXM.

As in the past years, Field Day was a success. Although we do not typically have official results until late October, the weather was good, we had a good turnout and the bands, well... they were not cooperating. The latter is of course due to the low end of the 11-year solar cycle and we know that all others in the event had the same challenges. Several VIP visitors came out to see our operations and I understand that they left impressed by what we are capable of. Kudos to Jason VA7ITJ for his planning and leadership.

Although we typically take a break after Field Day, it has not been a quiet summer. Unfortunately, the City of Surrey has a paying tenant for our Operations and Training Centre so our gear will be put into storage until replacement quarters can be found. Thanks to those who came out to assist with the packing.

As you may have noticed, over the years The Communicator has grown from a simple club newsletter to a multi-page publication that many are now referring to in feedback as our 'magazine'. While I never intended to get into the magazine business, I am encouraged by the feedback we receive from all over the globe. Each issue takes around 30 hours to edit, sometimes more. I have reluctantly decided to start publishing bi-monthly, to fit in with my other commitments. Whoever said retirement is boring should step into my shoes for a while.

The club related content will continue to be published on our Internet Blog at <https://ve7sar.blogspot.ca>. If you have not visited, please give it a look. All previous issues of The Communicator are there, but there is much more, and it is updated regularly. It should fill the gap between issues of this publication.

~ John VE7TI
Communicator Editor

**"The hottest places in Hell are reserved for those who,
in a period of moral crisis maintain their neutrality" - Dante**

On the Web

ve7sar.net

Between newsletters, watch your e-mail for news, announcements of Amateur Radio events, monthly meetings and training opportunities.

Click the links below to follow our presence on the web and social media:

SARC Blog
ve7sar.blogspot.ca

Twitter
[@ve7sar](https://twitter.com/ve7sar)

FaceBook
[SurreyAmateurRadio](https://www.facebook.com/SurreyAmateurRadio)

Our YouTube Channel
[SurreyARC](https://www.youtube.com/SurreyARC)

SARC Photo Albums
Web Albums

or
tinyurl.com/SARCphoto

At The Last SARC Meeting...

June 12 2019

2019 Annual General Meeting



Annual General Meeting Minutes
June 12, 2019

Attendees: 29

Meeting Start: 7:05pm

Location: EMBC PREOC

Announcements

The 2018/2019 Annual General Meeting of the Surrey Amateur Radio Communications Society (held at the Emergency Management BC Offices/PREOC) was called to order at 7:05pm on June 12, 2019 by President Stan Williams VA7NF. There were 29 members in attendance.

Welcome

Stan welcomed everyone to the AGM and wished to provide a big thanks to all the directors serving during the past year. Some directors will be standing down this year, and Stan indicated that he must also step away from the role of President for the remainder of his term. The next executive will appoint officer roles including the President. Stan wished to thank say thanks for the opportunity to serve as President for the past 3.5-4.5 years.

Stan confirmed that there was a quorum attending the Annual General Meeting, requiring over 25% of the membership and that 51% of those attending be voting members in good standing.

Jason B. called for a round of applause for the directors service last year.

Stan: provided a reminder that members must be paid up and be a member in good standing in order to vote at the AGM tonight. Ballot cards have been prepared and are up front. Scott will provide them to paid members.

Ion Marinescu VA7ION: Question are family memberships limited to 1 vote?

Stan: No Family memberships are entitled to 2 votes.

Audited Financial Statements

Our treasurer Scott Hawrelak presented audited financial statements including a Balance Sheet and Income Statement that were examined by Pam Hamilton.

Arthur S. moved for the approval of the financial statements. Seconded by Robert Fishwick. Carried.

Stan: Thanks to Pam Hamilton for examining the books this year. Applause

Stan/Scott: We will be asking to change the Fiscal Year to assist in the auditing of financial statements next year. The next fiscal year should be June 1 to April 30. During the next general meeting planned for Sept 2019 we will hold a special general meeting for a vote.

Election of Directors

Directors whose 2 year terms expire are: John Schouten, Scott Hawrelak, John Brodie, and Robert Fishwick. Scott and Robert offer to stand again tonight.

1st call for nominations:

Stan William nominates Don Hamilton as director. Accepted

John Brodie nominates Steve McLean as director. Accepted

John Brodie nominates Jason Biggin as director. Accepted

Ralph Wrotniak nominated Sheldon Ward for director. Accepted.

2nd call for nominations

None

3rd call for nominations

None

Nominees are:

Scott Hawrelak, Robert Fishwick, Don Hamilton, Steve McLean, Jason Biggin, Sheldon Ward

Jinty Reid: How many people are normally directors?

Stan: We are filling 4 positions out of 8.

Jeremy: There will be a maximum of 8 with 4 elected each year for a 2 year term.

Ion Marinescu VA7ION: I only know some of the people on the board but maybe the others can introduce themselves?

John B: I'd like to say a few words about some of the candidates

Stan: I would prefer not. There was an exception made last year to allow speeches and there were some complaints that some candidates did not have time to prepare speeches ahead of time.

Each candidate is acknowledged in the room but no speeches or prepared statements from candidates are made. During the coffee break you all are welcome to speak with each of the candidates.

Break for coffee at @ 7:39pm

Return from coffee at @ 8:06pm

The attendance is confirmed as 30 attendees for the meeting with 29 members in good standing and 1 non-member.

John Brodie has a proxy vote from John Schouten, who is travelling.

Brief discussion about lack of proxy ballots being emailed out but the proxy is accepted.

Jeremy: We are expecting 30 total ballots to be cast tonight.

Stan calls for 2 scrutineers to count votes. Lawrence Harris and Gord Kirk volunteer. Ballots are given to the scrutineers.

Sheldon Ward: Request introductions for Don,

Robert and Scott.

Stan: The reasons for lack of speeches was explained before the break and as ballots are already being cast we must continue with the vote as planned.

Stan introduces some new members to the meeting tonight.

Barry Conroy just received his callsign in the mail today VE7BYF

Steve G. does not have a callsign yet but is interested in joining and being active.

Marco M. from Switzerland is here as a visitor. He has seen ham radio before but has no experience.

Ion Marinescu VE7ION and his son Jean Luc working on the son's his license

Field Day Discussion

Jason B.: Not this weekend but next weekend is field day. We will be located at 176th/20th Ave. I invite you all out to participate. You do not have to operate but I do have the operator schedule here tonight you can sign on for times. There will be a number of different activities on site with some food as well.

Stan: There is much experience to gain helping put up antennas, air cannons, running coax and other ham radio activities

Election Results

The scrutineers assured Stan that the counts were accurate.

The directors elected: Scott H. Steve M. Jason B. Don H.

Kjeld Frederikson moved that the ballots be destroyed. Pam Hamilton seconded. Carried.

Stan: Would all directors stay after the meeting for a photo.

Stan: Since this is the last meeting before the summer break a reminder that we



2019-2020 SARC Directors: [L -> R]

Jeremy, Michael, Anton, Steve, Jason, Scott, Stan and Don

will be hosting a social meeting at McDonalds at 72nd/King George in July and Aug.

Gord K. Surrey Fire Service has offered us a room at the new Fire Training Location for our regular meetings. Discussion about changing venues but no decision is made today.

Don H. moved that the minutes show we will be changing the financial year end to April 30th to be voted on in Sept Special General Meeting. Seconded Scott. Carried.

Stan: Call for new and other business:

None

Steve M. moved that we adjourn the meeting. Keld seconded. Carried.

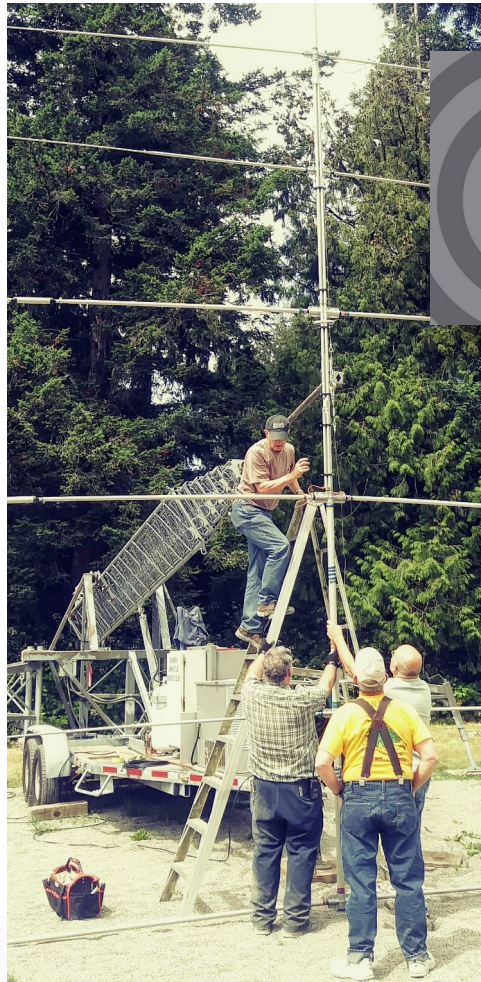
Meeting Adjourned: 8:51pm

~ Jeremy Morse VE7TMY

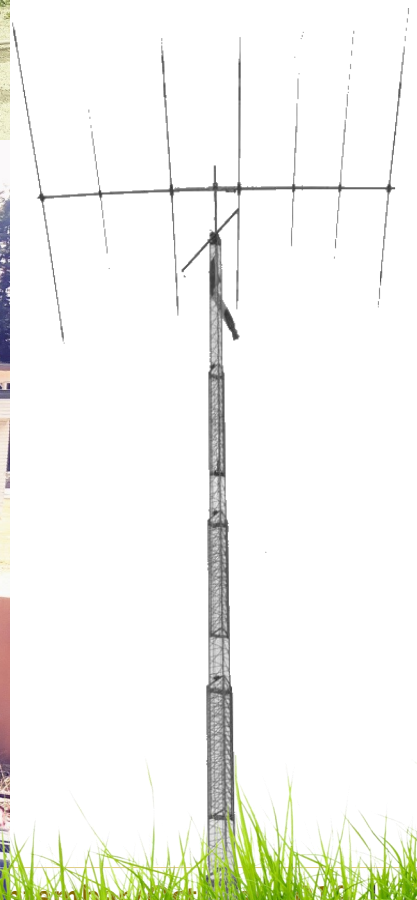


Field Day 2019





Good weather and an enthusiastic crew made for another successful Field Day. Thank you to all involved!



Field Day Observations

Pamela Hamilton VE7PFH



This year was my first year to attend a Surrey Field Day as a licensed radio amateur.

Firstly I joined the team that was planning the event. I was amazed and the amount of organisation and details that were involved. For instance: how to get the porta-potties to the site on time and at no cost to us. Then there was a trailer to be borrowed and driven to the site along with two others, a site plan, an organisational chart, time slots for using the radios to name but a few.

The actual field day activities began Thursday night with loading equipment from the OTC. I didn't participate. But I was there bright and early on Friday morning having breakfast at the Kalmar.

The rules for Field Day only allow assembly of equipment on site 24 hours ahead of the start of the contest so we waited around as the equipment arrived until it was time to start. There was lots going on - the porta-potties arrived on time. I had heard talk of big foot - an antenna tower - and now I actually got to

see it. My first impression was that it was shorter than I expected, but then we started levelling the frame and raising the tower and I understood why big foot. I wasn't much help, but watching was fascinating. I began to understand why we needed all of our 24 hours when cables got caught and had to be released whilst attempting to attach the antenna.

The next task I helped with was unloading the SEPAR trailer - which was parked under a tree. I raked up piles of pinecones (with help) so that people wouldn't trip when walking around the table. We set up a couple of shelters and discovered we had no pegs to pin them down if the wind came up - we went and purchased them. The weather was cool - we were wearing layers of clothing - although the sun did try to come out. We set up tables and notice boards and signs - which we mostly packed away again that night. I also watched a canon shoot a tennis ball into a tree so set up another antenna.



Later Nell and I helped Stan erect the NIVIS antenna - a whole lot easier than raising Bigfoot - but still an exercise, which required three people. It least it felt like I had contributed something of value.

People were erecting tents in a secluded spot setting up radios and making sure everything worked

After a pizza supper the day was over - I had met and talked several people - it was a good day.

We were back the next morning, another cool day and we not at all envious of those who had stayed overnight. We got all the stuff out of the trailer again and finalised locations. The canon had to be shot again as apparently the antenna was high enough - the young man who got to shoot it thought it was awesome. Then the contest began. Except for having to exchange tent pegs first

thing there wasn't much for me to do. When we had visitors I would help Don with his Demo in the SEPAR Trailer.

I chatted; I cooked veggie burgers for those of us to whom beef is taboo. As I don't contest, the day was a bit of an anticlimax although I did enjoy the Chinese food for supper.

Sunday came - and after breakfast we started to disassemble all of the e equipment. We had needed all of the 24 hours to put it up but everything was packed up and loaded and waiting for the final photo by just after one o'clock.

I was impressed with the competence of those who put this together and the technical knowledge available as well as the camaraderie and good humour of those who participated - particularly those who operated during such a cold night'

~ Pam VE7PFH



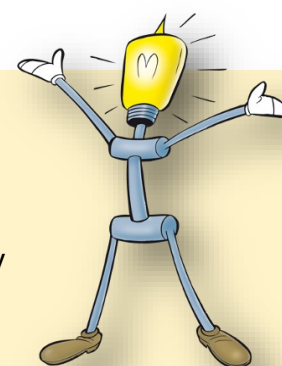
Above: Pam (L) and Nell ® and the SEPAR trailer at Field Day.

Below: Dom and Pam at the SEPAR trailer.



Membership Fees Are Now Past Due

Please note that our new fiscal year is here and your annual membership is due if you have not yet renewed. Payment may be made at any monthly meeting, at the Saturday coffee meeting, by mail or via PayPal. Details on payment options are available at our website at: <http://ve7sar.net/join.html>



The Contest Contender

John Brodie VA7XB

The RAC Canada Day Contest



This contest provided the first opportunity to test our new filters both on 80-40 wire antenna and the 20-15-10 beam, with the 7610/amp operating at high power and the Flex 6600 at low power; the filters did the job without problem, as expected.

1-2 Sep	Tennessee QP (all modes)
7-8 Sep	Nebraska QP (all modes)
14-15 Sep	WAE DX (SSB)
14-15 Sep	Texas QP (all modes)
14-15 Sep	Alabama QP (all modes)
21-22 Sep	Iowa QP (all modes)
21-22 Sep	New Hampshire QP (all modes)
21-22 Sep	New Jersey QP (all modes)
22-23 Sep	All Africa DX (all modes)
28-29 Sep	CQ WW DX RTTY
28-29 Sep	Maine QP (all modes)
5-6 Oct	California QP (all modes)
12-13 Oct	Arizona QP (all modes)
12-13 Oct	Pennsylvania QP (all modes)
12-13 Oct	South Dakota QP (all modes)
19-20 Oct	New York QP (all modes)
20-21 Oct	Illinois QP (all modes)
26-27 Oct	CQ WW DX SSB

For more information about these and other contests, check:

<https://www.contestcalendar.com/contestcal.html>



SARC's team on SSB and CW was comprised of VA7XH, VE7SXM, VA7VJ, VA7OM, VE7SSD, VE7TI and VA7XB making 387 contacts for a score of 77,910.

This was an interesting contest because of the rules for Mult-One which allows working of mults on a second radio. It would have been better if the contest had more mults than 10 provinces x 2 modes x 5 bands, because the available mults on a given band were soon worked out. Also only 1 band was really active at a time, given poor propagation conditions. So it was mostly an unproductive activity for the person working the second radio, once the few mults had been worked.

We had a few issues setting up the Flex 6600, and at first neither CW nor wav files would key the radio. Aside from proper menu settings, the most critical factor appears to be the cable routing between the radio and Maestro control head. Though we have had it working on earlier occasions, it was not fully resolved this time around.

Also, it has been noted previously that when networked, the PCs don't always seem to recognize the presence of the other PCs. The only solution so far has been to reboot one of the computers, sometimes repeatedly before both PCs would show up in the N1MM network window. Once both PCs showed in the network window, they stayed put.

A bigger problem: Early on Monday morning, Michael noticed that the rotator controller display was fluctuating and at the same time, turning the beam erratically. This was clearly an RFI issue. Once the controller was moved a few inches away from the amplifier and some ferrites installed on the control cable, the problem disappeared. What we did not realize is that the RFI had affected the controller headings which were now incorrect. Later operators apparently noticed that the beam was pointed in the wrong direction but many Qs had probably been lost before this was noticed.

Left are a just a few of the contests coming up in September and October.

~ John VA7XB

The OTC Report

John Brodie VA7XB

The Last Supper



This will be the last OTC report for a while as our lease has been terminated and a new tenant has leased the entire North Annex of the former City Hall site building effective Sept. 1st. During late July and early August, members were busy taking down and packing up all the operating equipment, antennas, Field Day supplies and surplus items acquired over the years.

Two full evenings were required for antenna take-down and another two sessions for disassembly and packing of items stored inside the building. Many thanks to those members who came out and willingly gave of their valuable summer time to do these essential tasks.

As of the date of writing, it is our understanding that the City of Surrey is committed to finding us another location but, in the meantime, we will be putting our equipment into storage. By the time you read this, that job will likely be complete.

The final social night at the OTC on August 14th was attended by an unusually large number of old and new members who came out to reminisce and think about what the future will bring.

~ John VA7XB



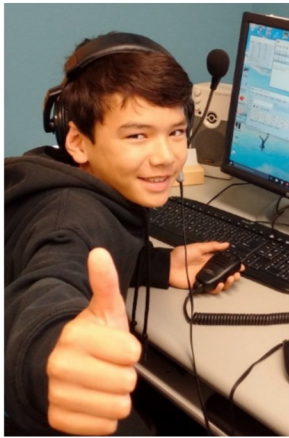
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- Practice an exciting hobby or start a career opportunity



Page 13—News You Can Lose

The Lighter Side of Amateur Radio



A Disappointing Field Day For Some

By WBØRUR, on the scene

JOHNSON, Montana – A local ham radio operator says he had a “terrible and horrific” Field Day this year, all due to his lack of planning.

Dick Longfellow, a ham radio operator since 1963, says it’s not the emergency preparedness training or the radio operating which excites him.

“I go for the food. And I like to make a day out of it. I top off the fuel tank in the F-150 and I visit a minimum of five or six local amateur radio club Field Day operations so I can treat myself to a smorgasbord of flavorful goodness. I travel all over the state.”

But this year, Longfellow – who weighs in at well over 300 pounds – says he left the loose leaf binder with his food plan somewhere in his shack and couldn’t find it when it came time to depart. So he set out on his annual pilgrimage with only memory to guide him.

“My first stop was at the Golden Spike Amateur Radio Club set up in Glacier National Park. They had just set out the salad table fixin’s when I arrived. So that’s a great way to start the day. Not everyone likes macaroni salad at 9 a.m., but I’m not really adverse to it.”

The day took a sour turn, says the retired oil pipeline supervisor, when he got to his second stop.

“Upon arriving at the Big Sky Amateur Radio Club event just outside of Butte, I knew something was wrong. It was 11 a.m. and they only had desserts out. I intended to align my arrival with the cooking of burgers and brats, but I was about two hours too early. It was only then I realized the shocking truth: I was supposed to be in Missoula.”

Longfellow says it was “physically impossible” to get back on schedule after his travel faux pas; particularly disappointing was his last stop of the day – Bozeman, Montana – just as the last slice of meatloaf was being eaten.

“I have no one to blame but myself,” he admits. “Good Field Day execution relies on weeks of planning followed by flawless execution. I dropped the ball, plain and simple.”

Longfellow says he may have found a solution for next year’s Field Day.

He will be setting up a GOTA station next to the chocolate fountain at the Golden Corral in Bozeman.

“I can visit with people between the banana pudding and the ‘endless’ beef tips. I think it will be a great way to attract new people into the hobby,” he declares.

~ Ham Hijinks

“I go for the food,” says Longfellow, seen here on his way to the food tent at the Creek County Communicators field day event.




September 2019

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1 CONTEST: Tennessee QP [all modes]	2 CONTEST: Tennessee QP [all modes]	3 1930 SEPAR Net 2000 SARC Net	4	5	6	7 08-1000 SARC Social: Kalmar Family Restaurant 8076 King George Blvd, Surrey, BC CONTEST: Nebraska QP [all modes]
8 CONTEST: Nebraska QP [all modes]	9 CONTEST: Nebraska QP [all modes]	10 1930 SEPAR Net 2000 SARC Net	11 1900 SARC General Meeting	12	13	14 08-1000 SARC Social: Kalmar Family Restaurant CONTEST: WAE DX [SSB] Texas & Alabama QP [all modes]
15 CONTEST: WAE DX [SSB] Texas & Alabama QP [all modes]	16	17 1930 SEPAR Net 2000 SARC Net	18	19	20	21 08-1000 SARC Social: Kalmar Family Restaurant CONTESTS: Iowa, New Hampshire & New Jersey QP [all modes]
22 CONTESTS: Iowa, New Hampshire & New Jersey QP [all modes] All Africa DX [all modes]	23 CONTEST: All Africa DX [all modes]	24 1930 SEPAR Net 2000 SARC Net	25 1900 SARC Exec Meeting	26 1900 SEPAR Meeting	27	28 08-1000 SARC Social: Kalmar Family Restaurant CONTESTS: CQ WW DX [RTTY] Main QP [all modes]
29 CONTESTS: CQ WW DX [RTTY] Main QP [all modes]	30	<div> <p>For details on all SARC events, go to ve7sar.net</p> <p>For details on all SEPARS events, go to separ.shutterfly.com/calendar</p> </div>				

Contest Details: <http://hornucopia.com/contestcal/contestcal.html>

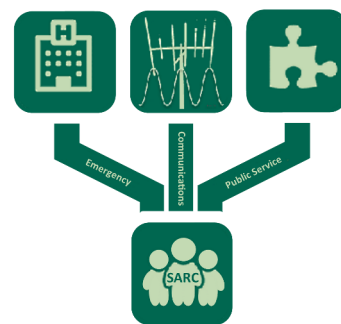
October 2019

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1 1930 SEPAR Net 2000 SARC Net	2	3	4	5 08-1000 SARC Social: Kalmar Family Restaurant 8076 King George Blvd, Surrey, BC CONTEST: California QP [all modes]
6 Delta ARS ComFest Swap 10am-1pm CONTEST: California QP [all modes]	7	8 1930 SEPAR Net 2000 SARC Net 1830 SARC— SEPAR Basic Course	9 1900 SARC General Meeting	10	11	12 08-1000 SARC Social: Kalmar Family Restaurant CONTEST: Arizona, Pennsylvania & South Dakota QP [all modes]
13 CONTEST: Arizona, Pennsylvania & South Dakota QP [all modes]	14	15 1930 SEPAR Net 2000 SARC Net 1830 SARC— SEPAR Basic Course	16	17	18	19 08-1000 SARC Social: Kalmar Family Restaurant CONTESTS: New York & Illinois QP [all modes]
20 CONTESTS: New York & Illinois QP [all modes]	21	22 1930 SEPAR Net 2000 SARC Net 1830 SARC— SEPAR Basic Course	23 1900 SARC Exec Meeting	24	25	26 08-1000 SARC Social: Kalmar Family Restaurant CONTEST: CQ WW DX [SSB]
27 CONTEST: CQ WW DX [SSB]	28	29 1930 SEPAR Net 2000 SARC Net 1830 SARC— SEPAR Basic Course	30	31 		

Contest Details: <http://hornucopia.com/contestcal/contestcal.html>

Public Service

Amateur Radio Serving The City Of Surrey



Public Service Report

Don Hamilton VA7GL

Are we sensitive to our Customers needs and expectations?

We must be able to demonstrate our commitment to Public service and emergency preparedness, by meeting or exceeding our customers expectations

The following is a article published from the ARRL proving that the ARO's can bring a great amount of support to the emergency professionals.

I would like to encourage you to read the following keeping in-mind that when we volunteer to support public service/emergency communications. We now have customers with specific expectations, that we should strive to meet.

With Red Cross officials and Federal Emergency Management Agency (FEMA) personnel monitoring, dozens of radio amateurs along the US east coast on May 23 demonstrated Amateur Radio's ability to deliver messages without commercial power, infrastructure, or permanently established stations. The event took place in coordination with ARRL. The demonstration was a mock response to a simulated disaster scenario -- a major hurricane with mass casualties. During the event, radio amateurs at portable stations from New England to the Carolinas delivered message traffic to

W1AW, where Station Manager Joe Carcia, NJ1Q, and ARRL Emergency Preparedness Assistant Ken Bailey, K1FUG, coordinated and relayed the information to an amateur station at the Baltimore American Red Cross office for officials attending a joint Red Cross-FEMA meeting there.

"About a dozen stations participated in the demonstration, including operators in Virginia, Maine, Rhode Island, Massachusetts, New York, northern New Jersey, western Pennsylvania, Delaware, and South Carolina," ARRL Communications Manager Dave Isgur, N1RSN, said. "Red Cross officials were on-site at W1AW and at the receiving station in Baltimore. [Red Cross volunteer Rosty Sablicky, W2ROS, observed the W1AW operation]. At both sites, they indicated that they were impressed with Amateur Radio's ability to deliver messages digitally so that they could be displayed on a computer screen and in a format that matched the format for messages that the Red Cross uses."

My point is on the last paragraph, accurate messages digitally transmitted with 100% accuracy, in a format that the customer understands. To accomplish this, we need to take every opportunity to polish communications delivery skills by learning to work together to deploy our equipment that will

W1AW Station Manager Joe Carcia NJ1Q and ARRL Emergency Preparedness Assistant Manager Ken Bailey, K1FUG, are relaying messages from field operators while Red Cross volunteer (and radio amateur) Rosty Sablicky, W2ROS, looks on. (Photo by Michelle Patnode, W3MVP)



communicate without using the “Grid”. Plus sending accurate message quickly.

Being able to support our community when they’re off the grid should be a priority. But the main thing that our “customers” are really looking for is high speed accurate communications in a format they are comfortable with.

These are the vital components of what ARO’s are expected to accomplish in the event of a Public Service/emergency callout?



SEPAR Report

Gord Kirk VA7GK

A lot of activity has happened since the last Edition of the Communicator was published.

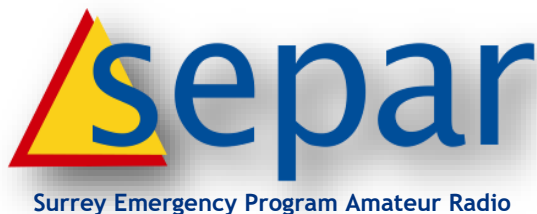
SEPAR participated in several events.

Doors Open, Field Day, Canada Day, and National Parks on the Air at Fort Langley.

Several Members also participated in a Rapid Damage Assessment Course hosted by Surrey Fire Department.

Each of these special events has allowed SEPAR to engage with the public, explain who we are, and what capabilities we have. As we have set up and operated each of has learned what is needed to be ready to go on short notice. During set up we catch items which need repair or maintenance and always have a list of what needs doing.

The time spent with other Amateur Radio operators helps us know each other better and who is the best person to look after certain areas.



The next couple of articles I would like to outline the move to digital communications by the Public Service group, plus the importance of keeping in-step with our customers expectations. IMHO, we can no longer just be an analog communicator in a customer sensitive digital age.

~ Don VA7GL

SARC Public Service Committee Chair

The Rapid Damage Assessment course provided training to help recognize damaged buildings after severe weather events or earthquakes. This will help the community to have trained individuals throughout the city who can recognize potential danger with damaged structures and notify professionals for follow up.

Now that the summer is winding down we will prepare for upcoming fall activities.

The next SEPAR meeting will be on the fourth Thursday of the month, September 26, 2019.

We will be meeting at the new Surrey Fire Training Centre located at 14901 64 Avenue, Surrey, BC V3S 1X8. This is behind, and just east of Fire Hall #9. Map: <https://what3words.com/markers.addiction.ozone>

All are welcome as we will plan our upcoming training season. For further information about joining SEPAR or to be placed on the SEPAR email list please email Gord Kirk at VA7GK@shaw.ca.

Below: Ion VA7ION with SEPAR at Cloverdale Fire Hall #8 - Surrey Doors Open Event



Back to Basics

From The Canadian Basic Question Bank

John Schouten VE7TI



This month a closer look at station grounds...

B-003-019-005 If you ground your station equipment to a ground rod driven into the earth, what is the shortest length the rod should be?

1. 2.5 metres (8 ft)
2. 3 metres (10 ft)
3. The station ground system must conform to applicable electrical code requirements
4. 1.2 metre (4 ft)

We talk about grounding in class and occasionally there arises a discussion about Safety Ground versus RF Ground. They are not the same.

Most people are reasonably familiar with safety ground, the small 'U' shaped third contact on your AC outlets. When it comes to RF grounds, the confusion begins.

Safety Ground

At home, three-wire AC outlets connect the ground pin to the home's ground at the master circuit-breaker panel. Because the frequency of AC power is very low, the length of the ground wire doesn't matter. The panel is typically connected to an outside ground rod and a metal cold water pipe. It must be capable of handling any possible fault currents.

Safety ground was often referred to as 'Earth'; but the important factor is that all electrical appliances and equipment in your home does not present a voltage at the ground terminal.

Safety ground provides this safety by providing exposed conductors, such as

equipment cases, a path directly to the Earth, a zero-voltage point. The idea is to provide a better path than your body, if someone happens to touch a live connection.

Handling any equipment should not expose you to any current if they are all grounded, and thus at zero potential.

RF Ground

Important for HF stations, because of the generally high voltages involved, less so for 2m and 70cm stations at low power. Proper station RF ground is more accurately referred to as bonding. Bonding means keeping all equipment at the same RF voltage, not necessarily zero.

Because of the higher frequencies used in radio compared to your home AC power, any wire can act as an antenna and, if it does, it can present high voltages if touched.

You can bond equipment together at RF frequencies by connecting each piece of gear to a copper strap or pipe with a short piece of strap or wire. Ham gear usually has a ground terminal just for this purpose. Then connect the bonding strap or pipe to your AC safety ground rod with a heavy wire.

A heavy bar, ideally copper, predilled with evenly spaced holes can make a good bonding strip. On a budget, copper plumbing pipe is also commonly used.

A couple of other points to keep in mind. *[Hint, these are potential exam questions].*

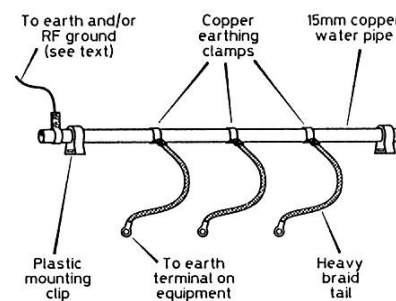
- Copper-clad steel is best for a ground rod driven into the earth;



- For best protection from electrical shock, all station equipment should be grounded, and to protect you against electrical shock, the chassis of each piece of your station equipment should be connected to a good ground connection;
- You should ground all antenna and rotator cables when your amateur station is not in use to protect the station and building from lightning damage;
- If a separate ground system is not possible for your amateur station, an alternative is an indoor grounding point to a metallic cold water pipe;
- An antenna switching system to enable the use of one antenna for multiple transceivers should ground the antenna on receive for the unused transceiver;
- One good way to avoid stray RF energy in your amateur station is to keep the station's ground wires as short as possible because RF hot spots can occur in a station located above the ground floor if the equipment is grounded by a too long ground wire.

An example... If your third-floor amateur station has a ground wire running 10.05 metres (33 feet) down to a ground rod, you might get an RF burn if you touch the front panel of your HF transceiver because the ground wire is a resonant length on several HF bands and acts more like an antenna than an RF ground connection;

- If you are being heard through stereo speakers when transmitting, you can minimize the possibility of this unwanted audio rectification by ensuring that all station equipment is properly grounded



So, looking back to our original question, If you ground your station equipment to a ground rod driven into the earth, what is the shortest length the rod should be?

Answer #2, 3 metres (10 ft), used to be the correct answer. As electrical codes change from province to province, ISED has now elected to use answer #3, **The station ground system must conform to applicable electrical code requirements.**

More on proper grounding on our blog at:

<https://ve7sar.blogspot.com/2018/08/a-primer-on-grounding-for-hams.html>

~ John VE7TI

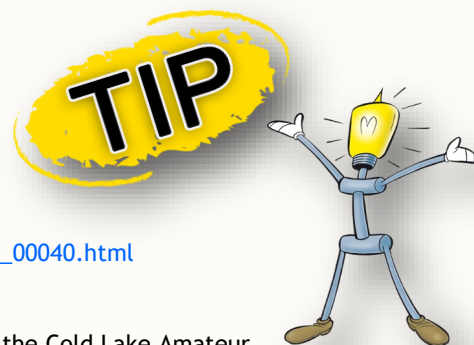
Study Links

Whether you are new to the hobby or brushing up on skills, you should find these study links helpful:

1. RIC-7 is the entire up-to-date Industry Canada (IC) Basic Question Bank. <http://tinyurl.com/CanadaBasicQB>
2. There is a RIC-7 that has some explanations along with the questions. [RIC-7 2014rev08.05 with explanations.](http://tinyurl.com/RIC72014rev08.05)
3. The Amateur Radio Exam Generator is at: https://www.ic.gc.ca/eic/site/025.nsf/eng/h_00040.html
4. The ExHaminer Study software for Windows is at: <https://wp.rac.ca/exhaminer-v2-5/>
5. There are plenty of good resources for both basic and advanced exam study courtesy of the Cold Lake Amateur Radio Society at: <http://www.clares.ca/va6hal%20training.html>

Contact SARC if you wish to write the Basic or Advanced Exam. If you pass we'll even give you a year's free SARC membership!

Newly Licensed? When you receive your paper license in the mail, it will come with a form that can be filled out and mailed to the Radio Amateurs of Canada office, at which point an introductory RAC one-year membership will be set up. Introductory memberships are identical to our existing basic memberships and you will receive the The Canadian Amateur magazine for one year.



Telegraph Cove, BC



Telegraph Cove is tucked away on the eastern coast of Northern Vancouver Island. In 1912, Telegraph Cove was a one-room station, the northern terminus of a telegraph line that began in Campbell River and stretched from tree to tree along Vancouver Island's east coast.

It is now one of Vancouver Island's most visited tourist destinations, from humble origins. The community grew, first with a salmon saltery sawmill, then with the new industries developed by the ingenuity of its Japanese, Chinese, German, Danish, Italian, Indian, American, Irish, Scottish, and English inhabitants – old and new Canadians, all neighbours in a place accessible only by boat.

Telegraph Cove is now a remote community of about 20 inhabitants, on Vancouver Island in British Columbia, Canada, located approximately 210 kilometres (130 mi) northwest of Campbell River. It has become a launch point for eco-tourism. It shares the inlet with Beaver Cove which is 3 km (2 mi) up the inlet.

The economy is based primarily on tourism due to its prime location on Johnstone Strait and its proximity to Robson Bight ecological reserve. Telegraph Cove serves as the send-off point for kayakers and other whale-watchers who are interested in sightings of the large number of orca whales that spend the summer months in Johnstone Strait, which separates the northern part of Vancouver Island from the rest of British Columbia.

The ORIGINS OF TELEGRAPH COVE

Above the end of the boardwalk is the site of the original Telegraph station for Northern Vancouver Island. Originally built in 1911, Government attendants would 'pound the brass' to get their morse code signals through. The Telegraph signals were especially crucial during the 1918-1919 influenza pandemic which swept through the Alert Bay area. Over 21 million died world-wide and this remote area was particularly hard hit.

One family with four children lived at the mouth of Baronet Passage and had no contact with the outside world - no one knows how they became infected. When the wife first became sick, then the husband, they set out for Alert Bay. Suffering badly, they barely made it here to Telegraph Cove in their row boat.

The husband collapsed and died upon arrival, later that night the wife succumbed. The attendant from the Cove had the sad mission of rowing the six miles of wind, waves and tides to Alert Bay with the grim message.



What3Words

racing.stickier.choice

yappy.pound.gloves

songbirds.ballooned.hurricane

develop.contacts.mentors

EMBEDDED.FIZZLED.TRIAL

flaked.volcano.hurray

Kicked.Converged.Soccer

These three randomly chosen words saved Jess Tinsley and her friends after they got lost in a forest on a dark, wet night.

They had planned a five-mile circular stroll through the 4,900 acre (2,000 hectare) woodland Hamsterley Forest, in County Durham, on Sunday evening, but after three hours they were hopelessly lost.

"We were in a field and had no idea where we were," the 24-year-old care worker from Newton Aycliffe said.

"It was absolutely horrendous. I was joking about it and trying to laugh because I knew if I didn't laugh I would cry."

Jess Tinsley dialled 999 after getting lost - and was told to download an app to her smartphone

At 22:30 BST they found a spot with phone signal and dialled 999.

"One of the first things the call-handler told us to do was download the what3words app," Ms Tinsley said.

"I had never heard of it."

Within a minute of its download, the police said they knew where the group was and the soaked and freezing walkers were swiftly found by the Teesdale and Weardale Search and Mountain Rescue Team. What3Words is accurate to within 3 metres.

What3words is a geocoding system for the communication of locations with a resolution of three metres. What3words encodes geographic coordinates into three dictionary words; the encoding is permanently fixed.

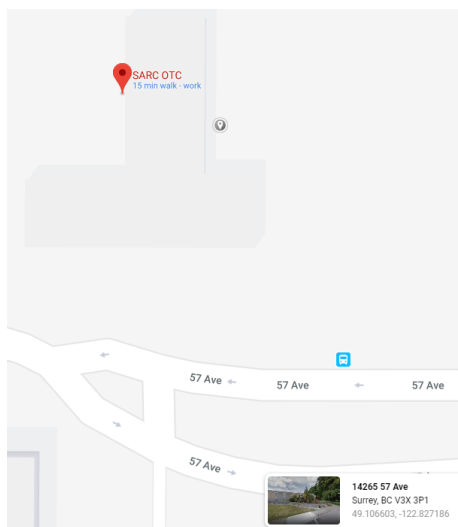
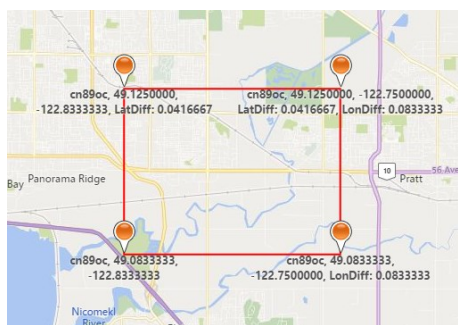
As Hams, we are familiar with the [Maidenhead Grid Locator](#) system, but it is not as easy to use, nor as accurate as What3Words. An instrument of the Maidenhead Locator System (named after the town outside London where it was first conceived by a meeting of European VHF managers in 1980), a grid square measures 1° latitude by 2° longitude and measures approximately 70 × 100 miles in the continental US. A grid square is indicated by two letters (the field) and two numbers (the square), as in CN89, the grid square within which VE7SAR, our OTC station, resides.

Each subsquare is designated by the addition of two letters after the grid square, as CN89oc. These more precise locators are used as part of the exchange in the 10-GHz contest. They measure 2.5 minutes latitude by 5 minutes longitude, roughly corresponding to 3 × 4 miles in the continental US. Two points within the same Maidenhead subsquare are always less than 12 km (7.5 mi) apart, which means a Maidenhead locator can give approximate, but not accurate precision from six transmissible characters.

For even more precise location mapping, two additional digits were proposed and ratified as an extended locator, making it altogether eight characters long, and

”

What3words is a geocoding system for the communication of locations with a resolution of 3 metres



Above, our VE7SAR Training Centre using the common 6-character Maidenhead square. CN89oc

Left, Google Maps coordinates (49.106603, -122.827186 or 49°06'23.8"N 122°49'37.9"W)

Below, inspiration.envisioned.intervened is the what3words location right to the OTC front door.

inspiration.envisioned.intervened



dividing subsquares into even smaller ones. Though little used, such precision has uses in very short communication spans. Beyond this, no common definition exists to extend the system further into even smaller squares. Most often the extending is done by repeating alternating subsquare and square rules (base numbers 24 and 10 respectively). However, other bases for letter encodings have also been observed, and therefore such extended locators might not be compatible.

What is what3words?

what3words is a really simple way to talk about location.

Its developers have assigned each 3m square in the world a unique 3 word address that will never change.

For example filled.count.soap marks the exact entrance to what3words' London headquarters. Three word addresses are easy to say and share, and are as accurate as complex GPS coordinates that are subject to errors when communicated.

51.520847, -0.19552100 filled.count.soap

How it all began:

Chris Sheldrick used to work in the music industry, organising live events around the world. He quickly discovered that in the music world, people struggle with poor addressing every day. Getting lost trying to find events was pretty common.

He had some pretty bad days, like in Italy, when a driver unloaded all the equipment an hour north of Rome, instead of an hour south of Rome. And a slightly worse day, when a keyboard player called him and said, 'Chris, don't panic, but we may have just sound-checked at the wrong wedding'.

After experiencing several similarly frustrating situations, he realised that addressing around the world just wasn't good enough. To get people and equipment to the right places - and on time - he tried sharing GPS coordinates

instead. But asking people to meet at the likes of 40.7127753, -74.0059728 was just too unreliable. Entering 16 numbers into a device, or even sharing them over a phone call, can pretty easily go wrong.

After experiencing a few too many navigation nightmares, Chris sat with his mathematician school friend, Mohan Ganesalingam, to find a way to describe location that would be as precise as GPS coordinates, but more concise and easier for people to use. Before long, Mohan created the first 3 word address algorithm on the back of an envelope. Chris and Mohan then connected with Jack Waley-Cohen, also a school friend, with a background in translation - and [what3words](#) was born. It's been five years since Chris, Mohan and Jack co-founded what3words. Today millions of people across the world are using 3 word addresses to find, share and describe places faster and more easily - from festival-goers and travellers to delivery drivers, event organisers and postal services.

The developers say: "Our vision is to become a global standard for communicating location. People use what3words to find their tents at festivals, navigate to B&Bs, and to direct emergency services to the right place."

Maidenhead is currently the common location standard for Amateur Radio. What3words is currently being adopted by many emergency services in the UK and there are stories that indicate it could replace postal codes there. For a more precise locator, what3words could be the preferred choice, certainly for conveying the location of an event or incident.

It certainly deserves monitoring.

What3Words in the news: <https://www.bbc.com/news/uk-england-49319760>

The SARC OTC: <https://w3w.co/inspiration.envisioned.intervened>

~ John VE7TI

*There are
What3Words iOS
and Android phone
apps too.*

Satellite Gear

Contact John VA7XB
604-591-1825
va7xb@rac.ca

MFR	MODEL	DESCRIPTION	PRICE
Yaesu	G5500	AZ-EL rotator + controller + 2 cables	350
Yaesu	GS-232B	Satellite tracking interface	300
Cush-craft	A148-20T	10/10-el 2m cross yagi	100
		20/20-el 440 cross yagi	100
	10 ft tower	Including fiberglass/Alum boom	20



2019 BC QSO Party Contest Report

Rebecca VA7BEC

Beyond Expectations

BCQP Contest Coordinator

A few days before BCQP 2019, my CW/digital op and I were at a lunch where fortune cookies were handed out after the meal. Our fortunes were “Avoid misunderstanding by keeping your ears open.” and “Don’t give up. The best is yet to come.”

Yes, like horoscopes and tarot cards, the words are vague enough to apply to just about anything the reader is experiencing or hopes to experience.

Maybe because BCQP was just around the corner, we cautiously hoped our fortunes meant that we’d have to listen carefully to pull callsigns out of big pileups and that being persistent—in this case, relentlessly striving to raise the profile of BCQP and attract wider participation—would deliver amazing results, be that logs received or scores or districts activated or just positive comments.

Did this happen? Yes, indeed. And far beyond any and all expectations.

Conditions for the two days of BCQP 2019

Conditions were challenging to say the least. I checked propagation data before BCQP started at 1600z: -1 sunspots, aurora level of 6.7, geomag unsettled, and all the bands except 20M given a disheartening “closed” or “poor”. 20M was rated “fair”.

Sunday was more or less the same, although 15M perked up a bit, at least for a few hours.

Challenging but not impossible

Casual operators and newcomers to the hobby and/or contesting often conclude that there’s no point in participating when conditions are so bad. But a band is never dead or closed or a waste of time or whatever you want to call it if someone somewhere is calling CQ and someone somewhere hears that CQ. Those who gave up before even starting missed out on a very good time.

Band conditions, while most definitely challenging, did not seem to stop operators near and far from getting into the hunt for BC stations with varying degrees of success, be that the Q count or the score. Activity was extremely high, with a noticeably deeper pool of CW operators or at least a more pervasive presence on this mode, as substantiated by QSO data in submitted logs. Lots of activity. Lots of Q potential.

At times, five, six and sometimes more BC stations were spotted, clumped fairly close together but not enough to cause interference, and this presented stations everywhere with an opportunity to pick up several VE7/VA7s in quick succession as opposed to tuning up and down the bands and through the modes for too many minutes between QSOs.

At VA7ODX, it was hard to discern callsigns in the noise. Many stations that are always booming were hardly more than whispers in the wind. The surprise DX that we have come to cautiously expect in BCQP was almost nonexistent even though the CW op and I could “feel” stations out there calling us. SRI.

Sponsor Information

Orca DX and Contest Club

Callsign: VA7ODX

QSL Manager/Mailing

Address: VA7BEC

371 56th Street,

Delta, BC V4L 1Z4 CANADA

Website: www.orcadxcc.org

BCQP inquiries:

va7bec@rac.ca



And then, as if a magic wand dispersed the noise, stations started to come in 59+, loud and clear from the east coast. The grayline effect was noticeable, as the sponsor station log filled with states and provinces in a westward movement.

20M was by far the best band for pileups, but 15M and 40M presented potential at various times. Apparently, there was an opening on 10M. We missed it. :(

Positive Trends

There were more federal electoral districts activated this year: 31. Another move in the right direction.

Overall, activity was high and steady. The solid on-air presence of BC stations – both multi- and single-op – definitely piqued interest in and sustained awareness of BCQP. This brought more and more people to the party. The snowball effect. Wonderful!

Sunday operating hours were well-received again this year. I know it was Super Bowl Sunday but for non-football fans, the Sunday option offers operators who have limited time on Saturday to have a few more hours of fun in BCQP. Indeed, an analysis of submitted logs in 2019 shows pretty comparable activity on both days, with 5,555 QSOs over the core 12 hours on Saturday and 4,644 QSOs over the eight-hour segment on Sunday. A detailed analysis of results, including Saturday-vs-Sunday operation, with graphs is provided in the number crunching section in the full .PDF report on the ORCA website at http://orcadxcc.org/content/pdf/bcqp/2019_BCQP_report.pdf.

Record-Breaking Results

A sustained presence by quite a few CQing BC stations on two or more modes and more districts activated led to some amazing results for stations inside and outside the province. Just goes to show that human perseverance and ingenuity are no match for fickle propagation gods.

Two BC stations—VE7UF and VE7TI—turned in scores exceeding one million points. First time for any station to break the one-million mark. It was bound to happen, of course, especially under the two-day structure. Just for reference sake and not to take anything away from the outstanding results posted by VE7UF and VE7TI this year, in 2015 and 2016, before Sunday operation was added to BCQP, the sponsor station racked up scores of 942,020 and 967,744, respectively. Surpassing the one-million mark was just a matter of time, circumstances and determination.

Naturally, the previous record set by VA7ODX in 2016 was hugely surpassed by Team VE7UF, with a score of 1,448,528, and Team VE7TI, with a score of 1,091,064.

Keith VE7KW, logging 349,260 points from QSOs across three modes, broke the top BC single-op result (268,212) set by Marcy VE7JT in 2013. I must emphasize that Marcy's score—built on one mode (SSB) when BCQP was just a Saturday event—stood for six years.

Rewards for Perseverance

BCQP offers many incentives for getting on the air, from the camaraderie of team operation and the chance to polish skills or help others learn about HF operation

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BCQP offers many incentives for getting on the air, from the camaraderie of team operation and the chance to polish skills or help others learn about HF operation to potential pileups and surprise DX.

by VA7BEC

Photo for sponsored plaques:
Parliament Buildings, Victoria, BC



to potential pileups and surprise DX.

For operators seeking tangible rewards, BCQP has lovely BC scenery- or notable landmark inspired certificates and plaques, different every year and therefore collectible.

Certificates recognize top scores by stations in BC and outside BC in all categories of entry, and special certificates are awarded for particularly noteworthy results even if these results aren't top scores. In addition, a certificate category recognizing top scores in each district was established in an effort to spur greater participation from operators throughout BC— since VE7/VA7s are quite literally the life of the party—but particularly in areas not often activated.

Plaques are awarded in sponsored categories. Thanks to the support of clubs and individuals, there were 10 plaques available in 2019: Top BC (single-op), Top BC (multi-op), Top Canada outside BC, Top YL, Top US, Most Federal Electoral Districts Contacted, Top DX, Top Mixed Mode, Top CW and Top BC Club.

Given the depth of participation in 2019, a number of stations achieved results good enough for top spot in

more than one plaque category. But the rule is one plaque per station, with priority given to geographically based categories.

VE7UF qualified for the Top BC (multi-op) plaque as well as the Top Mixed Mode plaque. As per the Plaque Allocation Policy*, VE7UF will receive the geographically based plaque, which opens the mixed mode plaque to the station with the next-highest score—Team VE7TI.

Team VE7TI also qualified in the Most Districts Contacted plaque category, as did Jeff N8II, both with 23 districts. But Team VE7TI is getting the Mixed Mode plaque, as noted above, and Jeff N8II will receive the Top US plaque, so VE7BC and VE7SAR, tying with 20 districts, will get the district plaque and the category will be appropriated retitled.

Outside BC Scores

The number of logs from stations outside BC was truly enormous. I mean HUGE!!! Given the tremendous level of participation, particularly from stations in the United States, it would seem fair and appropriate to recognize top scores not just in each category of entry but by category of entry in

each state, province and DX entity rather than the previous method of second and third-place certificates in each category of entry where there were at least 10 logs. The only requirement for eligibility is that the log have at least 10 valid QSOs.

Going forward, if BCQP 2020 draws a similar level of participation, certificates will be awarded under this structure again, and if this becomes a three-year trend, the rules will be amended accordingly.

~ Rebecca VA7BEC

**Mark your calendar for the
2020 BCDX Contest:
Saturday/Sunday:, 0600z Feb
1 - 0359z Feb 2 AND Sunday:
1600z Feb 2 - 2359z Feb 2**

*Stan VA7NF [L] and Jeanne VA7QD [R]
working the 2019 BCQP at VE7IO.*



Radio Ramblings

Kevin McQuiggin VE7ZD/K7MCQ

High Speed Meteor Scatter: A Newbie's Experience



This month I'd like to relate my experience as a new user of the "MSK144" digital mode in the popular WSJT-X software package to make my first meteor scatter contacts on the 6 metre band.

Meteor scatter (MS) is one of those esoteric modes that few amateurs have tried, as the mode and its related technical aspects sound complicated. I want to de-mystify these beliefs and encourage others to give the new mode a try, as it is both technically interesting and educational, but also admittedly "cool" to talk with other stations using a meteor trail as a reflective medium for your signals.

If you are active on FT8 and have even a simple antenna for 6m, you are already equipped to successfully monitor others' meteor scatter contacts, and likely even make a few QSOs yourself.

Technical Details

As we all know, radio signals propagate using different models, depending on the signal's frequency. HF signals (3 - 30 MHz) propagate globally using the reflective characteristics of the ionosphere. VHF and UHF signals are less likely to propagate in this manner as they tend to "punch right through" the ionosphere and travel into space, although in certain circumstances they too can be propagated very long distances (beyond line of sight) using ionospheric "ducting" and some other uncommon propagation modes.

Signals on the 6m and 2m amateur bands display characteristics of both HF and higher VHF frequency signals. On the 6m band in particular (50 - 54 MHz), if very strong ionization is present, then the 50 MHz signal can indeed be reflected, and return to earth a significant distance away. The problem is that this strong level of ionization hardly ever occurs naturally on 6m.

Meteors and Ionization

Outer space within the range of the earth's orbit around the sun is filled with rocks and dust left over from the formation of the solar system, and with debris shed by comets that have been orbiting the sun for billions of years.

Every day, indeed every hour, the earth encounters space dust and rocks which enter the atmosphere as "meteors". Most of this space debris is composed of dust or small rocks the size of a grain of sand.

These small particles enter the atmosphere at the incredibly high speed of 11 to 72 km per second¹. They decelerate quickly due to atmospheric drag and heat up due to friction. Most meteors burn up high in the atmosphere, but a very tiny percentage of this debris is large enough to *not* burn up completely before the object hits the earth's surface, becoming a "meteorite".

Meteors generate ionization trails up to hundreds of kilometres long as they pass through the upper atmosphere. The



Meteor scatter (MS) is one of those esoteric modes that few amateurs have tried, as the mode and its related technical aspects sound complicated. I want to de-mystify these beliefs



kinetic energy of these tiny objects strips electrons from the atoms in the upper atmosphere due to friction, creating a cylindrical path of ionization which can be used to reflect VHF and UHF radio signals. This ionization does not last long, as the stripped electrons quickly recombine with atoms in the upper atmosphere.

It is these ionized meteor trails which are used by hams to propagate 6m, 2m, and sometimes even higher frequency signals.

Geometry of Meteor Scatter Contacts

Meteors generally burn up about 100-150 km above the earth's surface. Studies have determined that a reflective region² at this height can effectively propagate radio signals roughly 1500 km. This is a hard limit given the geometry of the situation. So, meteor scatter will never support global propagation, but solid contacts within about a 1000-mile radius of your station are possible. In my newbie experience with a small antenna and low power I have had MS contacts out to about 500 miles, so far.

"Pings"

The amateur radio term for a reflective ionization event is called a "ping". You'll hear only background noise; then that noise will increase, and you'll hear a strong signal. After a short period of time the signal will fade, and you'll be back to just background noise.

The duration of a ping is limited, as the electrons stripped by the heat and momentum of the meteor soon recombine with the oxygen/nitrogen in the upper atmosphere, neutralizing the reflective region. Pings last longer at lower frequencies. A five-second ping on 50 MHz may last only a second on 144 MHz. This is because higher frequency signals need stronger ionization before they are reflected.

Practical Application

In the times before digital amateur radio³, meteor scatter was not for the faint of heart, nor for the impatient. Pings long enough to support SSB or normal speed CW QSOs were few and far between. It could take hours to complete a single contact as operators on each end waited for "the big rock"⁴ that generated a long enough ping to complete their QSO. QSOs were scheduled for pre-arranged dates and time

periods. Still, the activity had a dedicated following in the amateur radio community and hams learned a lot about the mode and its propagation model⁵.

When meteor scatter was combined with high speed communications techniques such as computer-based high-speed CW⁶ and, eventually, modern digital modes, it became much more practical as a medium for amateur radio contacts.

Today we have packages such as the popular WSJT-X which bring meteor scatter communication capabilities to the average amateur radio operator. I will describe a good starter setup in the following paragraphs.

Station Requirements

I'd recommend starting your meteor scatter experiments on the 6m band. Most modern transceivers cover 50 - 54 MHz. Receiver sensitivity is not a special concern, as pings are usually pretty loud, and WSJT-X is good at detecting weak signals anyway.

You'll need an antenna: directional is best, but if you only have a dipole or a vertical, then you'll still be able to hear a few stations and possibly make a few QSOs under good conditions when there are "bigger rocks" hitting the atmosphere.

Use your existing WSJT-X application but switch it to "MSK144" mode from the Mode menu. Note that the waterfall graph changes to a horizontal format and is much smaller. MSK144 uses 15-second send and receive sequences as described below. The waterfall displays two sequences: the current 15-second period on top; and the previous period on the bottom.

The best frequency to listen on is 50.260 MHz, upper side band. This the standard 6m MSK144 calling frequency.

If your antenna is steerable, then from the Vancouver/Lower Mainland area you should point to the south or southeast, as that is where the majority of North American meteor scatter activity is located. You won't have to move the antenna until you get some basic experience.

If you can generate 50 - 100 watts into a slightly directional antenna like a small Yagi, then that'll be enough to make several contacts. Of course, if you have lower power but an antenna with

higher gain, that'll work too. Effective radiated power (ERP, i.e. power to the antenna plus its gain) is what matters in radio communications!

At VE7ZD I built a homebrew 3-element Yagi⁷ using scrap tubing from under my back step, and linked this to my Elecraft KX3 with a small amplifier, giving me about 75 watts output on 6m. I have made fifteen MSK144 contacts on 50 MHz so far.

Monitor Some QSOs

MSK144 divides each minute into four 15-second blocks. During a QSO, MSK144 transmits for 15 seconds, then listens for 15 seconds. If you're just monitoring, you can listen for the entire minute.

The best time of day to listen for meteor scatter is in the early morning in the few hours before and after sunrise, and in the evenings. I am an early riser, so at this time of the summer I find about 1300 UTC (0600 local) and later the best time to listen. I grab toast and coffee while the radio monitors for pings. As the seasons progress towards the equinox on December 21st and the sun rises progressively later, then prime MS operating time will be more agreeable to the body!

While mornings are best, meteors hit the atmosphere 24/7, so you can hear occasional pings during the day and in the evening as well. Leave your radio on and see what shows up in the decode window.

There is also high-volume ping activity during meteor showers as the earth passes through particularly dense trails of comet debris. During these peak times (e.g. during the Perseid meteor shower in late July/early August) pings will be much more frequent, and QSOs are common up until around noon local time.

Try listening to some QSOs first, before trying to transmit. You'll note from the call signs that you'll observe in the WSJT-X decode window that the *westernmost* station usually transmits in the 1st and 3rd 15-second block of each minute. The easternmost station uses the 2nd and 4th 15-second periods. In BC of course, we'll always transmit "first", i.e. between 00 and 15 seconds; and between 30 to 45 seconds of each minute. Why? Because for us, east is where all the other stations are!⁸

MSK144 QSOs go through the same sequence as a regular FT8 QSO:

- A "CQ" is transmitted, e.g. CQ VE7ZD CN89
- This is answered by another station with a signal report, e.g. VE7ZD K7MAC -5
- The initiating station replies with its report, e.g. K7MAC VE7ZD R-10
- The QSO is terminated, e.g. VE7ZD K7MAC RR73

MSK144 transmits the current message (e.g. "CQ VE7ZD CN89") continuously throughout the 15-second transmit sequence. If a short meteor trail (a ping) occurs in that 15-second period, then the CQ will be reflected to any receivers in range of the trail. If the ping is long, then receivers will see multiple copies of the CQ in their decode window. Figure 1 shows a screenshot of my QSO with K7MAC in Idaho.

Band Activity					Tx Messages				
UTC	dB	T Freq	Message		UTC	dB	T Freq	Message	
125415	5	10.9 1510	VE7ZD K7MAC DN14		125400	Tx	1500	CQ VE7ZD CN89	
125445	5	2.1 1518	VE7ZD K7MAC R+00		125430	Tx	1500	CQ VE7ZD CN89	
125445	6	8.7 1534	VE7ZD K7MAC R+00		125415	5	10.9 1510	VE7ZD K7MAC DN14	
125515	4	1.0 1509	VE7ZD K7MAC 73		125432	Tx	1500	K7MAC VE7ZD +05	
125515	9	8.0 1519	VE7ZD K7MAC 73		125445	5	2.1 1518	VE7ZD K7MAC R+00	
125545	5	4.9 1506	VE7ZD K7MAC 73		125445	6	8.7 1534	VE7ZD K7MAC R+00	
125815	4	7.5 1509	CQ K7MAC DN14 U.S.A.		125500	Tx	1500	K7MAC VE7ZD RR73	
					125530	Tx	1500	CQ VE7ZD CN89	
					125601	Tx	1500	CQ VE7ZD CN89	
					125630	Tx	1500	CQ VE7ZD CN89	
					125730	Tx	1500	CQ VE7ZD CN89	
					125800	Tx	1500	CQ VE7ZD CN89	
					125830	Tx	1500	CQ VE7ZD CN89	
					125900	Tx	1500	CQ VE7ZD CN89	
					125930	Tx	1500	CQ VE7ZD CN89	
					130000	Tx	1500	CQ VE7ZD CN89	
					130040	Tx	1500	CQ VE7ZD CN89	

Figure 1 - MSK144 QSO between VE7ZD and K7MAC

As you can see, you need four pings (i.e. four ionized meteor trails) to complete a QSO. This can take anywhere from a minute to an hour, if "rocks" are scarce during a particular morning. MS contacts still take patience. My average QSO has taken about 5 to 7 minutes to complete, as both operators wait for a suitable meteor during their assigned TX block.

Often, QSOs fail to complete due to a lack of "rocks". This is a topic of frequent discussion in the active MS community.⁹ I have been working with a fellow in mid-California (another newbie, Dwight, KO6FE) to achieve a complete QSO for several weeks. We meet online in the early morning and coordinate our TX/RX sequence and frequency. We have about five incomplete QSOs as we are both using low power and small antennas. We will make it *soon*, we are both certain!

Waiting for Pings

If there are pings, you will see them on the MSK144 horizontal waterfall, and maybe even hear them if you monitor received audio.¹⁰ Pings can be strong or weak, and long or short. The strength of a ping determines its reflectivity, and the length determines the window in which signals can be reflected between stations.

MSK144 is high speed and very efficient: a ping of only 0.1 seconds is plenty long enough to support a QSO sequence.

Graphics

Here are some interesting graphics from WSJT-X in MSK144 mode that show you what a ping looks like. The titles below the following Figures 2 through 7 describe what you are seeing. Each waterfall is 15 seconds (one MSK144 time period) in length, with the current and former sequences shown above and below, respectively. Any of these pings, even the shortest and weakest ones, can carry QSO data.

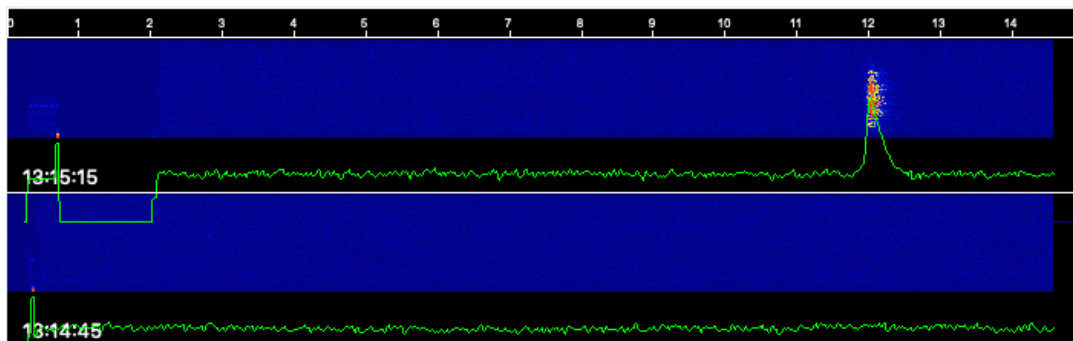


Figure 2
– Short Ping at 12 Seconds

Figure 3
– Short Ping at 10.75
Seconds

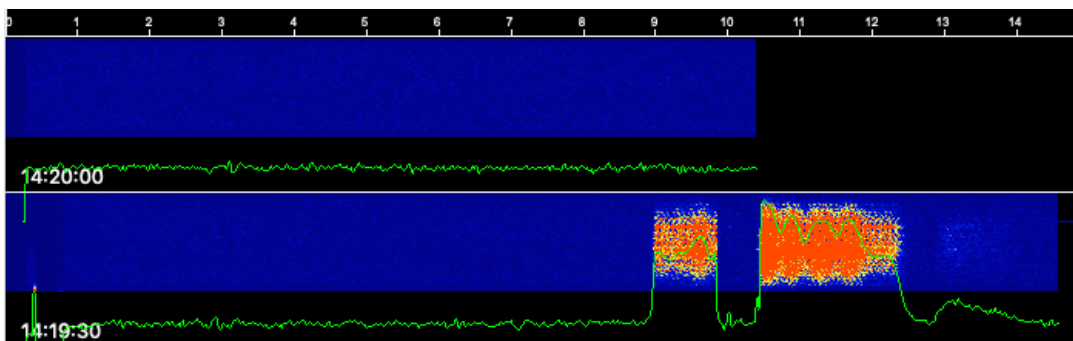
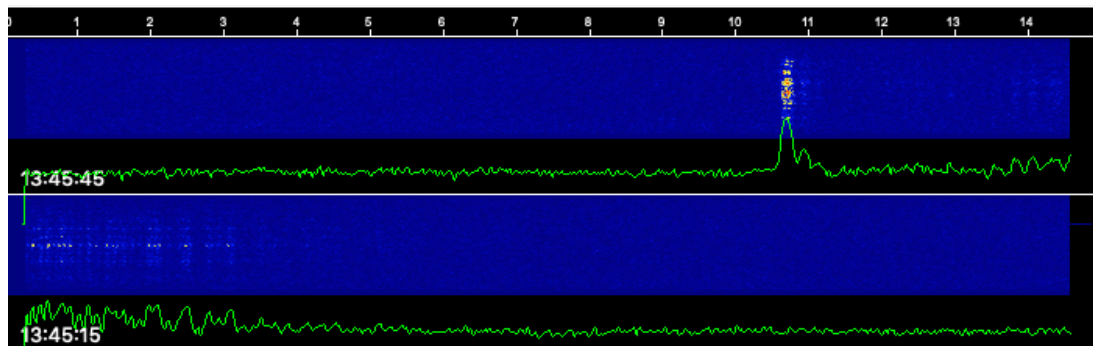


Figure 4
– A Strong Ping (Two
Meteors)

Figure 5
– A Very Long Meteor Ping

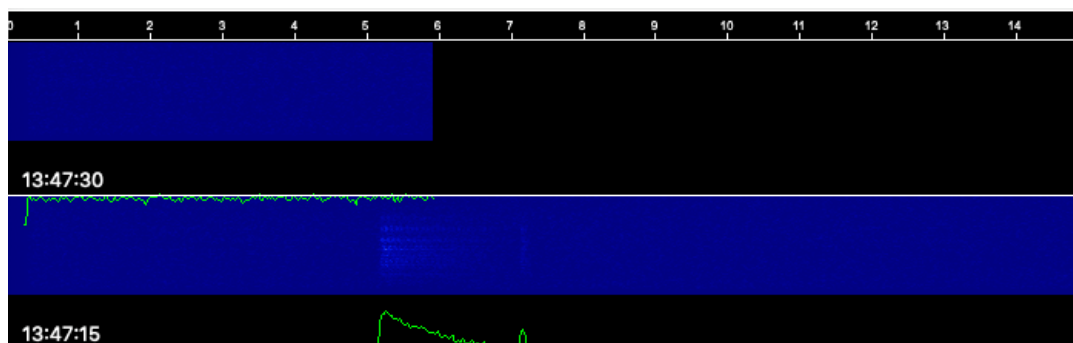
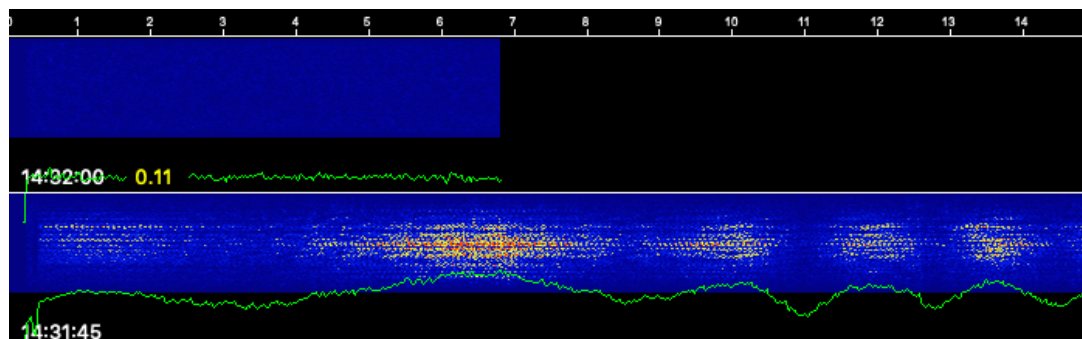
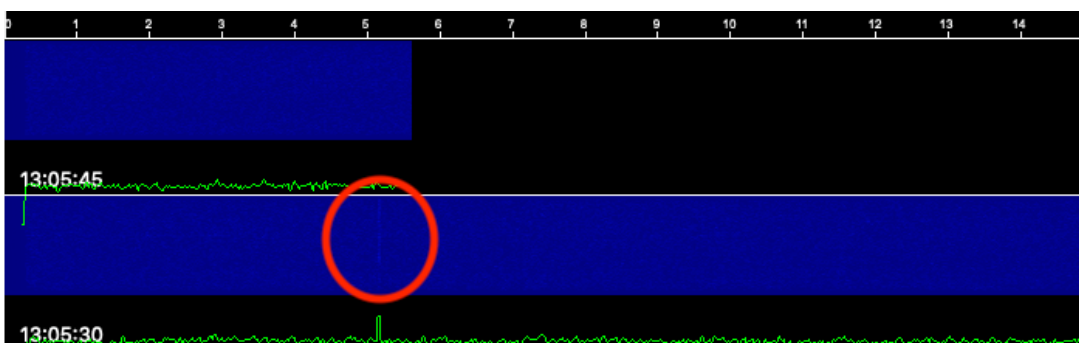


Figure 6
– A Faint Ping That Fades
Out Quickly

Figure 7
– A Very Faint Ping at 5
Seconds. Still Okay for a
QSO!



If you monitor received audio, then pings “pop” and “whizz”. They are fun to listen to!

Results

I have a very basic meteor scatter station, and I have worked over a dozen other stations over the last couple of months. It’s exciting to see pings come in, and your screen fill with acknowledgements, and then achieve the QSO with receipt of that happy “RR73”. While my station’s performance is not great, my 75 watts and 3-element Yagi are comparable to what most other meteor scatter enthusiasts are using, and I have worked stations in Idaho, California, Oregon, Washington, and Utah.

I like the mode so much that I am working to improve my antenna, and to add a little more power output on 6m. Then I will be hopefully able to work a few more stations more reliably. So it seems to go with a hobby like ours!

I have noted in particular that there is a large, friendly community of hams who are active on the mode, and that they are eager to assist “newbies” with any aspect of meteor scatter operation or station configuration. The community welcomed me with open arms and helped me make my first contacts using MSK144. Now I am helping other people who show up on the mode’s web chat page (see below) and

providing them similar support. Ham radio is a fantastic, collaborative hobby.

I love to learn about and gain experience with new modes, and getting started in meteor scatter has given me a greater understanding of this specialized aspect of amateur radio. I know more about propagation and the geometry of MS than I knew before.

Resources

If you are interested in trying meteor scatter communications using MSK144, then I suggest reading the MSK144 subsection of the WSJT-X users' manual at :

<http://physics.princeton.edu/pulsar/K1JT/wsjsx-doc/wsjsx-main-2.1.0.html>. It will give you details as to how to set up your transceiver and operate the new mode.

There is a good introduction to meteor scatter and the geometrical aspects at

https://www.qsl.net/g3wzt/g3wzt_ms.html.
Thanks to John, G3WZT for putting this together.

Lastly, visit "Ping Jockey Central" at

<http://www.pingjockey.net/cgi-bin/pingtalk/> and monitor the real time chats between meteor scatter operators. This chat system is used to report pings and schedule QSOs between stations. Users are from all over the world, but North America predominates. There are also die-hard 2-metre and even 222 MHz operators there, but to have success they need BIG antennas and high power, because (as we now know) pings are very short at these higher frequencies! Most of the ops are focused on 6m activities.

I'm always available to help you get started as well. Just contact me at my email below, or through the club!

That's it for this month! Feedback can be directed to the Editor, or directly to me at mcquiggi@sfu.ca.

73,

~ Kevin VE7ZD / K7MCQ

Footnotes

¹ That's up to 160,000 miles per hour! Source: American Meteor Society, <https://www.amsmeteors.org>

² That is, the tunnel of ionization generated by the meteor as it races towards the ground!

³ Experimentation with MS as a mode of amateur communication began in the 1950s.

⁴ Amateur term for "meteor"!

⁵ An interesting aside is the fact that the National Research Council in Ottawa developed an advanced military communications system using meteor scatter in the mid-1950s. The system was called JANET, and with huge antennas and high power it was able to support a 24-hour radioteletype link between test sites hundreds of miles apart in Ontario and the Maritimes. Many of the scientists and technicians were amateur radio operators. JANET worked well, but the idea became essentially obsolete with the launch of Sputnik by the USSR and the beginning of the "space age" of telecommunications in 1957. See <http://www.friendsofrc.ca/Articles/Forsyth-Janet/Janet-PeterForsyth.html> for an overview of the JANET project. Also see <https://bac-lac.on.worldcat.org/detailed-record/56920907?databaseList=283&scope=wz:549>.

⁶ In the 1980s, hams used tape recorders to greatly speed up standard CW QSO exchanges to about 150 WPM, and then transmitted these messages using meteor scatter. The ham receiving the message would also tape record it, slow it down, and thus be able to copy the CW. Complicated! Modern high speed digital modes like MSK144 are far superior to methods like this.

⁷ See http://users.belgacom.net/hamradio/schemas/50mhz3el_yagi.htm for Guy, ON6MU's nice 3-element 6m Yagi. He's happy to answer questions and provide feedback and will even take your comments and add them to his web page!

⁸ There is MSK144 activity to our west, of course, for example in Japan, but given the geometry of meteor scatter contacts, these stations are too far away for us to work. Remember that meteor scatter has a range limit of about 1500 km.

⁹ See below for URLs.

¹⁰ Highly recommended, as it gives you a better sense of what is happening on the calling frequency.

Solar Minimum

=

High Tide?

Those of us of a certain age will recall that when Jupiter aligns with Mars (and the Moon is in the Seventh House), an age of peace and love is supposed to begin.¹ Now, some scientists are suggesting that when Jupiter aligns with both Venus and the Earth, their combined gravitational pull on the Sun is sufficient (even though tiny) to touch off a new sunspot cycle.

According to a paper published in the May 2019 issue of *Solar Physics*,² three researchers in Germany correlated the planetary alignments - which occur every 11.07 years (sound familiar?) - with the times of solar minimum going back 90 solar cycles - covering more than 1000 years - and came up with a 100% match.

Their hypothesis is that the relatively tiny pull of the three planets' combined gravity has a tidal effect on the Sun that sets off something called a Tayler instability, which in turn, leads to the reversal of the Sun's magnetic field that is typically associated with the birth of a new solar cycle.

While their research is continuing, the researchers feel this association will make it much easier to precisely predict the start of each new cycle. They do not, however, offer an explanation of why some solar cycles are much stronger or weaker than others. (*With thanks to the HAMSci reflector*).

~ Posted by CQ Newsroom

Footnotes:

¹ For you young whippersnappers out there, that was from the opening line of the song, "Aquarius / Let the Sun Shine In," by the 5th Dimension, from the 1960s musical "Hair." Obviously, we're still waiting for that age of peace and love.

² "A Model of a Tidally Synchronized Solar Dynamo," Stefani F., Giesecke A., Weier T., *Sol Phys* (2019) 294:60. <<https://doi.org/10.1007/s11207-019-1447-1>>





SOLDER SPLATTER

6 Metre Vertical OCF Sleeve Dipole

*A slightly different
6m antenna*

Geoffrey E. Haines

N1GY

Do you want to try 6m? Even you Hams with only Basic qualifications can work this magic band. Antennas are reasonably compact and you might even try Meteor Scatter as described by Kevin VE7ZD in his article, starting on page 27.

It has always aggravated me a bit that I had an IC-706 Mk II G in my radio room that was perfectly capable of operation on 6 meters and I had no antenna for that band. I resolved for New Years that I would correct that omission. I looked at a number of designs in the various antenna books from the ARRL that I had on hand and also scanned the Internet for workable designs. Many were found but few coordinated with the supply of raw materials I had at hand. Then it occurred to me that with a little scaling up, the design for my dual band (2m/440) antenna that appeared in the pages of QST (Aug. 2006) might do the job.

I set to work to scale the antenna from its original size up to a length that would work for at least part of the 6 meter band. After much tapping on the calculator I decided to use 67" for the upper element and 46 1/2" for the lower element with a 1/2" space between them at the feed point. This would make the antenna 9'6" tall overall not counting the mounting method at the base of the antenna.

Since I had some lengths of 1" diameter aluminum tubing on hand as well as a length of 7/8" diameter as well, the antenna was fairly easy to construct. Slipping a piece of the 7/8" dia. tubing inside a 24" long piece of the 1" tubing, I adjusted the length to 67" and clamped the tubing in that position. A 46 1/2" piece of the 1" dia. tubing was cut for the lower element.

Two pieces of fiberglass tubing 7/8" OD with about 1/2" ID were used to complete the antenna. One section was slipped into the bottom of the upper element and the top of the lower element and secured with short sheet metal screws so that the elements were about 1/2" apart. A hole was drilled into the fiberglass tube between the two elements to permit the passage of the RG-8x coax down through the inside of the lower element. The dressed end of the coax was secured to the elements using hose clamps. The center conductor of the coax was clamped to the upper element and the shield braid was clamped to the lower element.

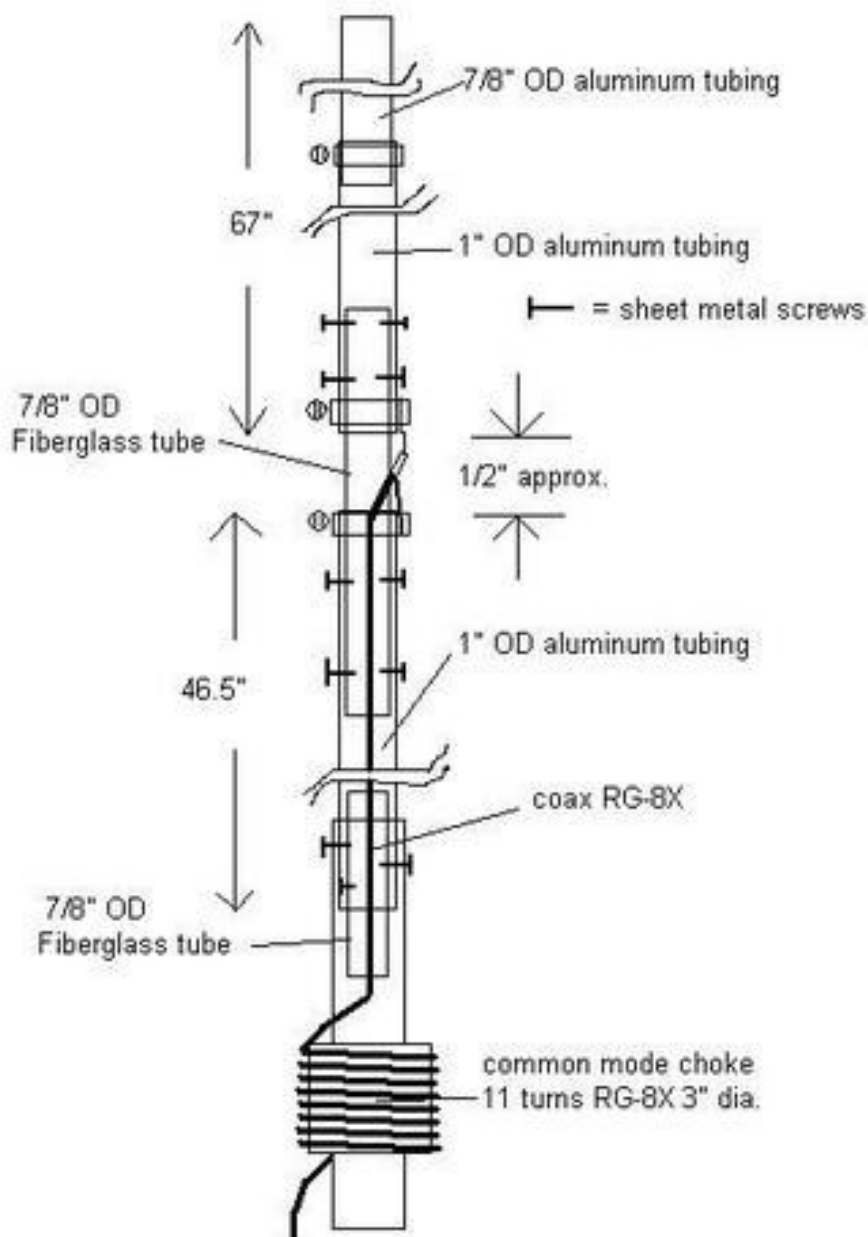
The second length of fiberglass tube was inserted around the coax and inside the lower element both for strength and to keep the coax roughly centered inside the lower element.

By countersinking the hole in the bottom of the lower element I was able to secure the fiberglass tube to the aluminum element with small flat-headed screws that would not interfere with the next step.

In order to mount this antenna on a metal mast, the antenna must be placed above the mast completely. This requires another length of non-conductive material to bridge the gap. I chose a 24" long piece of 1" ID PVC pipe because I had it on hand. The lower element was inserted about 6" into the PVC and secured with sheet metal screws. A hole was drilled in the PVC just below the end of the antenna for the coax to exit. The PVC pipe was secured to the top of the mast with two stainless steel hose clamps.

Once erected temporarily in my driveway on a tripod, testing commenced. I found that while using an HT to feed the antenna, the SWR was excellent from 50.1 MHz to almost 52 MHz. This covers the SSB and FM simplex portions of the band fairly well, so I was happy. Unfortunately, the results were not so good when I tried feeding the antenna with my 706. The SWR was between 1:2.5 and 1:3. Not Good. After checking with my friend and mentor, Allan, KJ9N who is a Technical Specialist for Antennas and Feed Lines, we decided to try a common mode choke mounted just below the bottom of the lower element. 11 turns of RG8X coax were wrapped around a short section of 3" dia. PVC and secured with wire ties and tape. The coil form was screwed to the 1" PVC "stub mast" and testing resumed. Now the SWR was between 1:1.1 and 1:1.6 from 50.1 MHz to 51.9 MHz. Now I was happy, and so it appeared was the 706.

As you can see from the pictures, the antenna presents a very slim profile, a virtue not unimportant when the lady of the house has veto power on new antennas. Not only that, it is mounted right in the middle of the side garden. It must look pretty good.



I have no doubt that the dimensions could easily be adjusted to cover the 52 to 54 MHz portion of the band. It is even possible that they could be adjusted to cover more than a 2 MHz portion of the band. I got what I wanted in coverage with the antenna at its current size, however, so I will leave the experimentation to others.

~ Geoffrey N1GY
www.n1gy.com



Are you looking for a weekend activity for late September? Perhaps something among the forests and mountains of the BC interior? What about watching rally cars roaring sideways in midair among those same trees on the dirt roads surrounding idyllic Merritt BC? Would you like to be an integral part of the radio control which makes this all possible? Then the Canadian Rally Championship wants you!

My name is Geoff Hill; I am the assistant organizer for the 2019 edition of Pacific Forest Rally, the 5th round of the 2019 Canadian National Rally Championship, which is being held on September 27-28, 2019. I would like to tell you more about this event, in the hopes that you or members of your club would be interested in volunteering as Radio Operators.

<http://www.pacificforestrally.com>

Pacific Forest Rally is a sanctioned performance driving competition taking place on temporarily closed forestry roads surrounding Merritt, BC. The event needs amateur radio operators such as yourselves, who are crucial to the safety and success of the weekend. This is also an amazing opportunity to put your amateur radio skills & equipment in action, and see real cars, on real roads, driving real fast!

What you would be doing:

As radio operators, you would be stationed at the start and finish line of each closed road, or at blocker positions along the route itself,

monitoring and controlling access at intersecting roads or high-risk areas. The primary roles of the radio operator are to help the event organizers track the progress of rally cars on the roads, to keep any civilians from entering the road during competition, and to pass along relevant information in the event of a crash or safety incident.

There will be a training and Q&A session for operators during the event.

What we provide:

To reduce costs to our volunteers as much as possible, we try to provide free shared accommodation at the Best Western, Ramada, or Quality Inn hotels in Merritt. We also provide bag lunches during the event, and free admittance to the awards banquet and post event celebrations. When the budget allows, we do our best to provide shirts, toques, or other free swag to volunteers to show our appreciation.

What you need to bring:

Because this event takes place in late autumn conditions on dirt/gravel/muddy/snowy forest service roads, we advise proper winter or all-weather tires in good condition, a reliable vehicle with reasonable ground clearance, and reliable radio equipment that can run for multiple hours at a time on the power provided by your vehicle. It is good practice to also bring food, fluids, and anything else you might need for an extended stay outside. The event does run after dark, so headlamps and flashlights will

come in handy. Finally, warm winter clothing and wilderness common sense are also important to bring along!

Where to sign up:

The volunteer registration page for the event will be found here:

<https://www.rallywest.com/signup/volunteer/PacificForestRally>

For more information:

Introduction to Rally Volunteering (description of the radio operator role in particular can be found on page 6):

<http://bigwhiterally.com/wp-content/uploads/2011/06/Introduction-to-Rally-Volunteering.pdf>

Canadian Association of Rallysport (CARS) website:

<https://carsrally.ca/>

Canadian Association of Rallysport YouTube channel with lots of videos showing rally cars in action:

<https://www.youtube.com/channel/UCfdng9UNJqQziq1RC6BlgoQ>

I humbly request your assistance to inform members of your amateur radio club of this opportunity. If you have any questions, don't hesitate to get in touch with me directly. Thank you for your time, I hope to see you out on the stages!

~ Geoff Hill

geoff@rallybc.com

Assistant Organizer, Pacific Forest Rally 2019

THIS IS VY0ERC

They Need A 40-80m Antenna!

VY0ERC is the northernmost amateur radio club in the world.

Located at 80° 3' N and 86° 25' W in grid square ER60, the club is located at a federal climate research station in Eureka, Ellesmere Island. The station is operated by research station staff in their spare time. As you can imagine, weather conditions are harsh, and antennas in particular are extremely difficult to deploy and maintain, especially over the dark winter months.

They advise that club membership is open to all, although it is not likely that they get many visitors just dropping in to say hello.

The club lacks good 40 and 80 metre antennas and has started a fund raising campaign to try to address this. 40m and 80m are more effective in the far north than the higher frequency HF bands in the winter months.

Should you care to make a small donation to this effort, VY0ERC's antenna funding page is at <https://www.gofundme.com/vy0erc-on-40-and-80m>, or you can donate via PayPal using their email, vy0erc@gmail.com.



We have had several busy social get-togethers on Saturday mornings in July and August as reflected in this photo from August 24th.

Several new members have also joined the group.

Here is your invitation to come out between 8am and 10am at the Kalmar Restaurant, 81 and King George Blvd, Surrey.



N1GY's Advice For New Hams

Geoffrey E. Haines, N1GY

Some Thoughts about starting out.



One of the standard answers most new hams get when inquiring about getting started is "buy a nice HT".

One of the most frequent series of questions I get asked by newly licensed hams concerns the setting up of their first station, be it in the home or in the car. Here is what I tend to tell them, allowing for the fact that each ham's situation is unique and this advice will thus vary with the circumstances presented.

One of the standard answers most new hams get when inquiring about getting started is "buy a nice HT". While this may be the right answer in some areas in the country, it is not necessarily correct in all areas. Here in Florida, there are few hills, let alone mountains on which to mount repeaters. Higher power will often mean the difference between a scratchy barely readable signal and a full quieting strong signal that is crystal clear. Sometimes a mobile rig is the best choice for a first rig because of the location and altitude of the local repeaters.

One of the truisms about amateur radio is that the new gear always has more new features than the previous generation of radios. Some of these features are genuinely advances and make amateur radio better. Unfortunately, some are needless complication at best and marketing hype at worst. The saving grace about these "advances" is that generally you can simply choose not to use them.

Sometimes, new hams are advised to buy used equipment when starting out. I think this is a bad idea for several reasons. First, used equipment has no

warranty. It is always sold "as is". A rig that looks great on the outside could have serious, possibly un-fixable problems inside. Second, many used rigs do not come with a users manual. Believe it or not, the best way to learn how to operate your new rig is to read the manual. A third reason I like new rigs for new hams is that they come with all of the parts that you will need. A mounting bracket, power cable, microphone, hardware, screws, bolts and nuts, etc are all nice to have when setting up your first rig.

A lot of new transceivers are capable of being programmed and operated with your computer. Sometimes the computer program or application is free from the manufacturer, sometimes the software costs a few dollars but even comes with the cable to connect it to your radio. With modern radios now having as many as 500 to 1000 memory channels, computer programming of the radio is often a good option to have.

I mentioned the user manual a few lines ago. The best way to learn how to operate your new rig is "Read the Manual". I know, a lot of consumer electronic gear is designed to be totally intuitive and easy to use. Ham radio gear does not fall into that category for the new ham. Read and re-read the user guide. Many new rigs buttons and controls do different thing depending on how they are touched. A tap does one thing. A push of less than one second does something else. A push and hold of more than that on the same button does

a third thing. Ham radios are not intuitive, particularly to the tyro. Again, read and re-read the manual.

The choice of a mobile rig raises questions that new hams have little or no experience with and where their biggest questions occur. A mobile rig normally requires three things that a hand held rig already comes with: An antenna, a power supply, and a way to connect them all together. Here are my recommendations for these items.

Antenna: The choice of an antenna will depend on several factors. If mounting a radio in a car, one needs a "mobile antenna". These usually are sold with an adequate length of coaxial cable and the usual PL-259 connector. The connector may be different depending on the intended use. BNC and SMA connectors are usually used with hand held radios, N connectors are normally used with UHF and above bands due to their lower losses. The old standby PL-259 is just fine for HF and VHF and indeed UHF works fine too up to 70 centimeters (also called 440 MHz).

If you are setting up your "mobile rig" in a fixed or "base" scenario then a different antenna is needed. The "ground plane" provided by the vehicle body is not available at the house, so the antenna must be designed to provide a replacement. There are many ways to do this. You can build your own, there are plans and instructions aplenty on the Internet. Just Google homebrew antennas (insert the band of choice here). There will be literally thousands of hits. Just look for one that looks good to you and get started. One can also buy a readymade antenna from any of the various retailers on the net. Their catalogs are readily available and make good reading. To mount either homebrewed or commercial antennas, you will need a mast. Standard TV mast is available at any home center and will work well.

Cable: You will also need coaxial cable of sufficient length and size to connect the antenna to the radio. As I mentioned before, in the mobile setup, the antenna usually comes with the coax already connected to the antenna and needs only to be run to the radio and connected. In the home, the coax will have to be run from the antenna on the mast,

down the mast, into the house and then have a connector soldered on correctly and then attached to the radio. There are very good articles on the Internet on this subject and books available from the ARRL on the subject.

Power: The radio has to be powered by something. In the car or truck, a "simple" connection of the red and black wires that came with the radio to the appropriate terminals of the vehicle battery will generally suffice. The reason I put quotes around the word simple in the above sentence is because installing a two way radio in a modern car is NEVER "simple". There are many things in modern cars that do not like RF. Therefore, any installation should begin with a bit of research. Most of the major car manufacturers have published guidelines on such installations. Some foreign makes want you to forget the whole idea and will not advise you. Believe me, a two way radio can be installed into just about anything. However, care and good engineering practice are required for any installation and are even more important when the vehicle's manufacturer does not help. In these cases I usually fall back on what Ford, GM and Chrysler have published and go from there. These guides are available on the Internet and some are listed on my "Links" page.

In the house, you will need a "power supply" to power the radio. This can be as simple as a deep cycle "12 volt" battery or it can be one of several types of power converter that takes 110 V AC and turns it into 13.8 V DC. Yes, that little wall wart that came with your last gadget can do that too, but NOT for the radio. One of



the requirements for the power supplied to the transceiver is that it be clean, free from any wavering in voltage. A good power supply cleans up the output so that no noise or "hum" is injected into your signal. Another requirement is that the power supply has enough capacity to send enough amperes to the radio when it calls for it. On receive, most transceivers use less than one ampere. Push the PTT button to send the radio into transmit and the current draw can easily exceed 10 amps for a 50 watt radio or 20 amps for a 100 watt rig. The little 5 amp power supply at "Radio Shack" will NOT be able to do this.

There are two main types of power supply suitable for ham radio. Linear power supplies, put out little noise and work generally very well. However, they are heavy, and take up more desk or floor space than their "switching" relatives. Switching power supplies are much smaller for the same amp capacity and much lighter. Poorly designed ones can create "hash" or noise on certain bands. In looking for a switching power supply I recommend the MFJ switching power supplies. They were tested along with units from the major ham gear manufacturers and somewhat surprisingly, beat the daylights out of the "Big Three". I have used an MFJ 4125 PS for several years and am totally happy with it. To be fair, I also own an Astron RS-35M linear power supply and have since before switching units were even an idea. It has served me well for many years and in fact still powers my home station.

Grounding: Another area that should be talked about is "grounding". It is very important, so important that entire books have been written on the subject. It is an issue that I do not have enough space to go into in depth here. The shield of the coaxial cable should be grounded outside the house to at least an 8 foot ground rod. This is usually done by connecting the PL-259 on the end of the Coax to a "lightning arrester" which has a bolt that connects a heavy wire to the ground rod. This "lightning arrester" will NOT protect your rig from a direct hit on your antenna. Nothing will do that. What it hopefully will do is allow a surge of electricity from a nearby strike to be shunted to the ground rod away from your expensive radio. The other end of the "arrester" is attached via a shorter run of coax to the back of your radio. Your radio itself and any other gear such as the power supply should also be "grounded" to that same grounding point. This can be done in a number of ways. I have used a length of 1/2" copper pipe, mounted on the back of my

operating position. This pipe is attached to the grounding point outside (which should be less than 10 feet away) by a copper strap about 2" in width and perhaps a 1/16" thick. All of the gear on my operating position, radios, power supplies, control boxes etc., is then connected to the copper pipe with flexible mesh cables that are mechanically attached to the pipe with metal hose clamps. Do not use solder. If you do experience a lightning event, the solder will melt within nano-seconds leaving you unprotected. The mechanical connections will last probably only a moment longer but it will be enough to divert the surge to ground.

Elsewhere on my web site I have written about other aspects of amateur radio and projects for the newcomer to build as they become at home with the technology. I will thus only touch the surface here.

Antennas are actually easy to build and make good projects for the newcomer. There are plenty of sources for designs and materials can be as close as the local hardware store. Always buy more capacity in a power supply than you actually need. The supply will loaf along having no problem keeping up with your usage of the radio and when you add more radios and more equipment and you know you will, the capacity is already there.

Find a space in the house that you can call your own. Maybe you have a spare bedroom or an area in an attached garage. Build or buy nice furniture for your radio room or ham shack. You have to use it, it might as well be nice to use. Arrange your gear so that it is easy and comfortable to operate. You will get more enjoyment out of this wonderful hobby if you make the place that you do it from, comfortable and pleasant to be in.

Do not be afraid to experiment. Don't be afraid to ask questions. Join your local amateur radio club. There is the best and fastest way to get your questions answered by people who live in the same area and have done the same things for the first time just like you are doing now.

73

~ Geoffrey N1GY

Geoffrey is Assistant Section Manager West Central Florida Section, ARRL

Technical Coordinator West Central Florida Section, ARRL

Frequent Contributor to QST over a number of years

His web site is at: www.n1gy.com

The air transceiver

Daniel Romila VE7LCG



This was the day in which he decided to change things. Looking back at that day, it was the most important day in all his ham radio life.

He sat on the chair in front of the transceiver. He unplugged the transceiver from everything, packed it and put it in the storage room. He came back, sat on the chair and took the antenna cable into both hands. He closed the eyes and stayed like this for some 30 minutes. After that he continued his life as usual.

It became a ritual. His wife respected this new activity, kind of activity. She was impressed how calm he could stay on the chair, with the antenna cable in his hands, like in a mystic prayer. Quiet, peaceful. She also noticed less spending for stupid radio stuff, which she never understood what was needed for. The spending suddenly went to zero.

But she worried about such habit that repeated every day. She convinced him to see a doctor.

The doctor asked him why he is doing it. He answered it makes him feel fulfilled. Some people spend time arranging postal stamps. He just stays on the chair, doing nothing. It's relaxing. Does he say

anything doing this procedure? No, he does not say anything. Does he hear voices? No, he does not hear any voices. He just stays quiet a half of an hour, with the antenna cable in his hands, and that is all. He does not harm anybody.

The doctor convinced the wife that everything is alright. Nothing to worry about.

The wife still had some doubts. So, in a day, after her husband finished a session of staying on the chair with both hands strongly clamped on the antenna cable, asked him provocatively if he feels any electricity. He said "No, darling. It's an air transceiver. Some people play the air guitar. I play the air transceiver."

"But when you had a real transceiver you said something from time to time. Now you are quiet" - the wife insisted.

"I am only connected to repeaters. I say nothing because everybody would think I am crazy if I launch CQ on repeaters."

"But do you hear voices?" the wife continued, a little alarmed.

"No voices, darling. Just some noise, from time to time. I am scanning the repeaters from Vancouver."



Social Reminder

The Surrey weekly social gathering is on Saturday at the Kalmar Restaurant at 80th and King George Boulevard between 8 and 10:00 am. You don't have to be a SARC member to participate. Bring your significant other, bring your family, see old friends and have fun.

KB6NU's Column

Dan Romanchik, KB6NU

Can you copy at 20 words per minute by hand?



About a month ago, this email from the ARRL was sent to the CWOps mailing list:

Greetings Morse Code Enthusiasts.

I have some exciting news that I want to share with you! The ARRL has reinvigorated the W1AW Code Proficiency Certificate program. Several things have changed beginning with our new sponsor, Vibroplex, a legend in Morse telegraphy equipment. If you see Scott Robbins W4PA and the Vibroplex team at a hamfest or convention please be sure to thank him for his support. The Vibroplex logo will appear on the newly designed certificates (see below) and in the award recipient page that will appear every month in QST.

That's right, each month in QST we will publish the most recent recipients of the W1AW Code Proficiency Certificate, beginning with all the 2019 recipients. As a bonus, we are sending all the 2019 CPC holders a new certificate at no cost to replace their older style award.

The award is available to anyone who copies one solid minute of code during the qualifying runs.

Complete program details can be found on the web at <http://www.arrl.org/code-proficiency-certificate>.

And to make the award available to more people we will double the number of opportunities to copy the CW text. Beginning September 2019, the qualifying runs will increase from twice per week to four times per week.

I am sharing this advanced notice with the Morse code clubs so that you can share it with your members. I have attached PDF files of the new certificate and the announcement that will appear in August QST, available in digital format July 8. I hope you are as excited about this as I am.

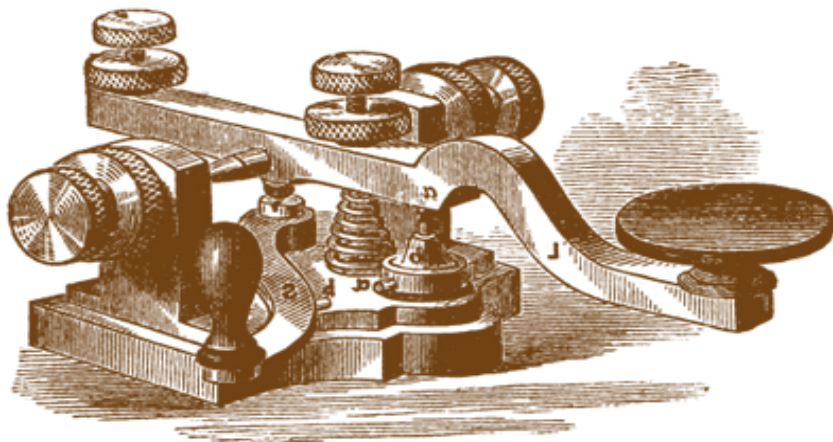
In closing, I want personally thank all of you who promote the use and proficiency of Morse code on the air waves and ask that you challenge your club members to submit their copy for the W1AW Code Proficiency Certificate.

73,

Norm Fusaro, W3IZ
Director of Operations

Almost immediately after I posted this to my blog (at KB6NU.Com), my friend, Paul, KW1L, replied, "How does one copy legibly at 40 wpm?" When I replied, "Typing," he countered, "On page 98 of the July 2019 QST, it says, 'Legibly copy at least 1 minute of text by HAND...'"

To this, I replied, "Well, I guess you and I are both screwed then. I can't copy by hand at 20 wpm, and it's really not worth it to me to practice and get that fast. I'm guessing that I'm not alone in this regard. The upshot is that the ARRL is going to be sending out a lot fewer of these Vibroplex certificates than they think."



I then emailed W3IZ for a clarification. He shot back, “By hand is to mean not using a code reading machine.” I suggested that he clarify this, both on the ARRL website and in QST. Of course, they haven't yet taken my suggestion, and the website still reads, “Copy one of W1AW's qualifying runs and submit one minute of solid copy (legible).”

~ Dan KB6NU

DXpedition to use FT8 robot?

It's inevitable. At some point, machines are going to render humans irrelevant. It's been a recurring theme in science fiction since before I was born (1955), and there are numerous predictions of the Singularity, the point in time when machines will be smarter than human, occurring between 2030 and 2045.

It may happen in amateur radio sooner than we think. A couple of days ago, one of my readers, sent me a link to a blog post by John, AE5X: Automated FT8 “FoxBot” in upcoming DXpedition - confirmed (<https://ae5x.blogspot.com/2019/08/automated-ft8-foxbot-in-upcoming.html>). He wrote:

“A DXpedition to Tokelau will take place from 1 to 11 October and it will be your chance to work an FT8 robot operating in Fox/Hound mode.

“Stathis SV5DKL has been working on a “FoxBot” for some time now, is listed as a partner to this DXpedition and has confirmed that the DXpedition will be using his FoxBot.”

John has since updated this post, noting “The SV5DKL logo has now been removed and the DX team will be in ‘full compliance’ with the mode.” Full compliance meaning following the rules set up by the ARRL DXCC rules.

The ARRL is, of course, against the use of robots. A recent ARRL Letter noted:

“ARRL has incorporated changes to the rules for all ARRL-sponsored contests and DXCC, prohibiting automated contacts and requiring that an actual

operator is initiating and carrying out a contact. These changes also apply to Worked All States (including Triple Play and 5-Band WAS), Fred Fish W5FF Memorial, and VUCC awards. The changes are effective immediately and affect the rules for both HF contests, and VHF/UHF contests as well as DXCC.

“A resolution at the July ARRL Board of Directors meeting pointed to ‘growing concern over fully automated contacts being made and claimed’ for contest and for DXCC credit. The rules now require that each claimed contact include contemporaneous direct initiation by the operator on both sides of the contact. Initiation of a contact may either be local or remote.”

As AE5X says, however, the use of FT8 robots in the future is a certainty. Sooner or later, some DXpedition is going to use an FT8 robot without saying anything about it. How is the ARRL going to know that a DXpedition is using robots if the DXpedition operators don't tell them?

I'm wondering when some DXpedition is going to give up on SSB and CW altogether. Why bother with those modes when you can make hundreds or thousands more contacts by just operating FT8?

Another thought just occurred to me. If the ARRL gets its way and Techs are awarded HF digital privileges, how long will it take for some enterprising Tech to make the DXCC Honor Roll using FT8 exclusively. Oh, the horror of it all!

~ Dan KB6NU

When he's not trying to figure out which way current flows, Dan blogs about amateur radio at KB6NU.com, teaches ham radio classes, and operates CW on the HF bands. Look for him on 30m, 40m, and 80m. You can email him at cwgeek@kb6nu.com.

Foundations Of Amateur Radio

VK6FLAB Onno Benschop

It broke and now what?

Imagine you're a new amateur. You've woken up in the middle of the night because insomnia seems like a good way to use amateur radio as an excuse to get on air and make some noise. You turn on the radio, key up the transmitter and the next thing you know it's dark. The breaker that powers your radio popped and there's no more glow coming from the hardware that's warming up your shack.

You get up, reset the breaker, tighten up your dressing gown and switch on your gear. You sit down and key up. Pop, darkness.

What do you do next?

The first thing to realise is that there is something wrong. That might sound obvious, the radio just tripped the breaker and it went off, but sometimes it's not that obvious, sometimes there's something wrong, but it's not nearly as clear as light and dark. For example, you might key up and the SWR goes high. You might not even notice if your radio is set to monitor the power output, or the automatic gain control that indicates how well your audio is going out.

The point is that noticing that something is wrong is a matter of paying attention. Just sitting there all dumb and happy, mashing the microphone is going to cost money or cost something else one day when you stop paying attention.

So, finding out what's wrong starts with noticing that something is amiss.

If you've been clued in that something is broken, and you're not standing next to your radio with a fire extinguisher, or tears running down your cheeks because

you just blew up your new radio, you can move onto the next part of this little adventure.

One thing to note is that it's really easy to make it worse at this point. Making it worse arrives in all manner of different ways, pain, either physical, RF burns, smoke, sparks, or mental like the emptying of your wallet when it goes pear-shape.

The art of troubleshooting is the process of attempting to learn what's going on. Some people know instinctively how to do this, others just wiggle stuff, unplug stuff and hope for the best. Hoping for the best is not the best plan.

One of the most basic aspects of troubleshooting, of trying to figure out what's happened, is to document what you find. Write it down. I know you're going to skip this, but it's going to bite you and then you'll be sorry and I'll be here telling you that I told you so. So write it down. Be meticulous. In case you're wondering, you're doing this for your own benefit, not my sense of curiosity. If you measure a value now and it's 7 Ohm and you change something and then you measure again and it's 23 Ohm, if you didn't write it down, you'll never know. Especially if the two measurements are a week apart.

Next basic concept is to change as little as possible, preferably one thing at a time. That's easy for me to say while your reptilian hind-brain is currently attempting to decide between whom to murder first and how fast to run. There is a tendency during panic to wildly wave



*For the audio
podcast
Foundations of
Amateur Radio
visit the website:
[http://podcasts.itmaze.
com.au/](http://podcasts.itmaze.com.au/)*

your hands about and fiddle with lots of stuff. The urge to do that is strong. Resist that urge with all that you have. Again, you're going to ignore that and I'm going to stifle my I told you so chant, but less is more. This is important. If you change two things, you've just doubled the possible causes. If you change three, there are now six different causes and if you change four things, we're up to 24 different versions of the problem. Keep it simple.

Third concept is to test things. The smaller the test, the better. For example, you're connected to the right antenna, right? The power supply is giving out the right voltage, right? The squelch is open, right? The microphone is plugged in, right? Test each of those, one at a time. The more you troubleshoot, the more this list will come naturally. Right now you're probably cursing me for not supplying you with a ready-made list. That's because my shack is nothing like yours, not even a little bit. Also, your shack keeps changing. Besides we're learning the skill of troubleshooting and I already know how to do that. Mind you, truth be told, I've been known to make mistakes too, so there's that.

Forth concept is about testing gear. There is a tendency within our community to buy gadgets. The more the better, a volt meter, an ohm meter, an ammeter, an SWR meter, an oscilloscope, a VNA, a what-ever. The more toys the better. While toys, uh tools, help, they're not the answer to every question. You have a more fundamental issue to deal with. Garbage in equals garbage out. If you measure ohms, but needed volts, there's no helping you. So, instead of focussing on what new tool to acquire, focus on what measurement you need to make to prove that something works, or doesn't.

The process of troubleshooting doesn't come naturally to everyone. I know, I've seen some very panicked people break some very expensive hardware, seen full-bright scholars make bonehead mistakes and heard stories of physicists narrowly avoiding electrocution, so don't be shy when you say that you're not sure how to really do troubleshooting.

You can learn. We all did, me included.

~ I'm Onno VK6FLAB



What's in a word?

When you join a new community you learn very quickly that each community has its own language. A word in one community has a different or extra meaning in another. For example, the word "Snowflake" in one community might refer to a phenomenon related to water and freezing, in another community it refers to a person who is sensitive, easily hurt and offended. If you mix the two meanings all manner of misunderstanding ensues.

In amateur radio, one of those words is the word gain.

This word is used in many different aspects of our hobby, but today I'm going to focus on one specific use of it, in relation to antennas, antenna gain.

This mythical property of an antenna is often used as a way to distinguish two different antennas and in advertising terms, bigger is better, more gain, more better. I'll skip over the marketing shenanigans related to artificially making the number larger by comparing apples and pears, or dBi and dBd and move on to how gain comes about.

Let's look at something completely different. A light bulb. One of those tiny ones you find in a torch, or on the front of your bike or even one in your car. In essence we have a gadget that emits energy in the form of light and heat when electricity is applied. The specifics aren't important, but let's just say we're going to ignore more voltage and more amps for the moment.

To listen to the podcast, visit the website: <http://podcasts.itmaze.com.au/foundations/> and scroll to the bottom for the latest episode. You can also use your podcast tool of choice and search for my callsign, VK6FLAB.

All podcast transcripts are collated and edited in an annual volume which you can find by searching for my callsign on your local Amazon store, or visit my author page: <http://amazon.com/author/owh>.

Foundations of Amateur Radio Volume 7 is out now - with chapters on digital modes, coax connector loss, waterfalls, station performance and more.

Feel free to get in touch directly via email: onno@itmaze.com.au, or follow on twitter: @vk6flab (<http://twitter.com/vk6flab/>)

If you'd like to join a weekly net for new and returning amateurs, check out the details at <http://ftroop.vk6.net>, the net runs every week on Saturday, from 00:00 to 01:00 UTC on Echolink, IRLP, AllStar Link and 2m FM via various repeaters.

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onno@itmaze.com.au

If you have a bare light bulb, light and heat radiates in almost all directions. You can't see any light where the fitting is, but everywhere else is a pretty uniform pattern. For the moment, let's ignore the fitting.

If you were to get a piece of black cardboard and drill a hole and put the light through it, you've essentially removed half of the light. Below the cardboard there is no light. Above the cardboard is the same amount of light as before. Half the light is being stopped by the cardboard and it's essentially lost - technically it's getting absorbed and the cardboard is getting a little warmer, but let's not confuse the issue for the moment.

If you were to make the cardboard reflective, say some foil, white, a mirror, whatever, the light that was hitting the cardboard would be reflected away from the cardboard and you'd experience that as the light getting brighter. Notice though, it's still dark below the cardboard.

In essence you've just increased the gain of your light bulb and it didn't cost you any more electricity to make that happen.

Antennas work in much the same way. There are a few more wrinkles. A light bulb is working with light and heat frequencies, wavelengths are between 100 micrometers and 100 nanometres, where the antennas we use in amateur radio typically look at 100 meter to 23 centimetre, so the material aspects of our mirror equivalent are different, but have a similar idea.

One thing that's fundamentally different between a light bulb and an antenna in our hobby is that a light bulb is generally only transmitting, where we tend to both transmit and receive with an antenna.

Remember when I skipped over the bit of the light bulb below the cardboard being dark? That's the antenna equivalent to not hearing something,

which means that you're better able to hear the signal in the direction you're pointing. The same is true for the bit about the light bulb fitting and no light below it.

In antenna terms, this phenomenon relates to the front-to-back ratio. Imagine turning your antenna 180 degrees. Pointing one way the signal is of this strength, pointing the other way it's that strength. Divide the two. If they're the same, the front-to-back ratio is 1, otherwise they express the directivity of the antenna. Another number you can use to market your antenna to an unsuspecting amateur.

So far we've only looked at using a single reflector for our light bulb, but if you were to use a torch, you'd get even more directivity and more gain. The same amount of energy, pointing at a smaller area. The ultimate expression of this is a laser beam, which is essentially a single focussed beam of light with no light anywhere other than where it's pointing.

Antennas do the same thing, using different methods, but the most common one is to add more bits of metal to focus the radio energy.

A light bulb emits energy in all directions and an antenna does too. Even if you were to make an antenna made of elements, all aligned in the same direction, the pattern is still mostly round, that is, it's like a cone of radio, regardless of the shape of the antenna.

Yes, there are ways of making antennas that don't make round cones, but that's a conversation for another day, but think about this, what would happen if you were to squash an antenna pattern and then focus it?

~ I'm Onno VK6FLAB

No-Ham Recipes

Paulette Schouten VE7VPE

Pumpkin Pie

Pumpkin pie is a perennial favourite, and many fall and winter holiday meals would not be complete without it. North-eastern Native Americans grew squash and pumpkins for many centuries, roasting or boiling them for eating.

In 1651, Francois la Varenne, famous French chef and author of one of the most important French cookbooks of the 17th century, wrote the cookbook, *Le Vrai Cuisinier Francoise* (The True French Cook). It was later translated to English. Here is the English translation for La Varenne's pumpkin pie that includes pastry:

"Tourte of pumpkin: Boil it with good milk, pass it through a straining pan very thick, and mix it with sugar, butter, a little salt and if you will, a few stamped almonds; let all be very thin. Put it in your sheet of pastry and bake it. After it is baked, besprinkle it with sugar and serve."

I think many of us are grateful for recipes that include exact measurements for ingredients, even though we might modify the recipes over time!

Ingredients:

1 1/2 cups (375 ml) pumpkin (can be canned or fresh or combination of both)

1 heaping tablespoon (more than 15 ml) all-purpose flour

1 cup (250 ml) granulated sugar

1 teaspoon (5 ml) ginger

1 teaspoon (5 ml) cinnamon

1/8 teaspoon (.65 ml) nutmeg

1/2 teaspoon (2.5 ml) mace

1/4 teaspoon (1.25 ml) salt

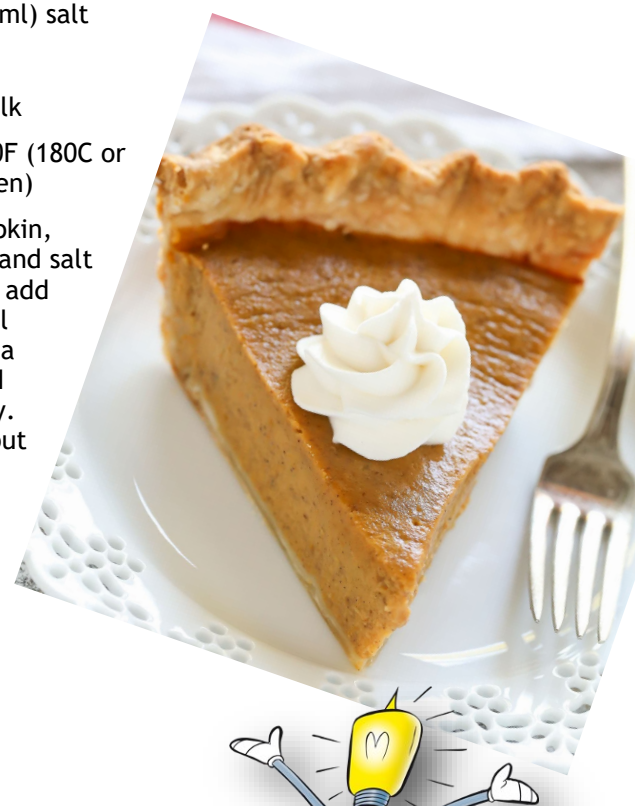
3 eggs

1/2 cup (125 ml) milk

Preheat oven to 350F (180C or a very moderate oven)

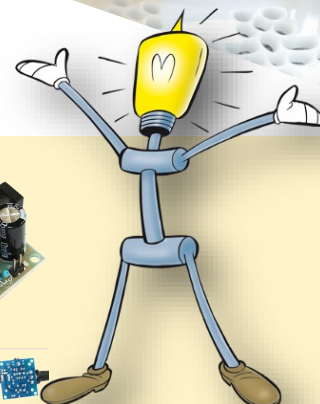
In a bowl, mix pumpkin, flour, sugar, spices and salt together beat eggs, add milk and stir all well together. Pour into a deep pie plate lined with unbaked pastry. Bake until firm, about 1 hour.

Makes 1 pie



Need a small audio amp?

Its hard to believe that you can get a reasonable quality pre-built amp, ready to go for so little money. I needed one for a project recently and ordered this one from eBay for C\$2.50 shipped free from Hong Kong. It needs 3 to 12 volts and will power up to a 10w speaker. It came in 2 weeks and works great.





Highlights of CITEL WRC Preparatory Meeting: August 12 to 16 in Ottawa

CITEL, the telecommunications committee of the Organization of American States, concluded a week of meetings on Friday, August 16 at the Shaw Centre in Ottawa.

These meetings have as their principal purpose to try to establish common positions on agenda items which will be acted upon during the World Radiocommunication Conference (WRC-19) which begins on Monday, October 28 in Sharm El-Sheikh, Egypt.

The following Radio Amateurs (from left to right in the above photo) were present at the CITEL meetings and were tasked with looking out for issues of concern to the Amateur Radio Service:

- Bryan Rawlings, VE3QN - on the Canadian Delegation and Radio Amateurs of Canada's Special Advisor to World Radiocommunication Conferences
- George Gorsline, VE3YV - member of the Executive Committee for the International Amateur Radio Union (IARU-R2)
- Flavio Archangelo, PY2ZX - on the Brazilian Delegation and International Amateur Radio Union Region 2 CITEL Coordinator
- Serge Bertuzzo, VA3SB, Radio Amateurs of Canada's International Affairs Officer
- Jon Siverling, WB3ERA - on the American Delegation and the Technical Relations Officer for the American Radio Relay League (ARRL)

The following are the principal highlights of the week's activities for Radio Amateurs:

Six Metres: There are now 14 signatories to an Inter-American Position (IAP) which in effect voices no objection to an allocation in 50 - 54 MHz to the Amateur Service in the International Telecommunication Union (ITU) Region 1 (Europe, the Mideast and Africa).

Six Metres: Amateurs were successful in adding wording to protect the Amateur primary allocation in 50 - 54 MHz from a US proposal to study implementing space-based Earth Exploration Service radars to operate in or close to 45 MHz.

47 GHz: Amateurs were successful in having Mexico remove the frequency segment 47 - 47.2 GHz from their proposal to study several additional frequency ranges for the Fixed Satellite Service.

47 GHz: An IAP supported by 11 member states supports No Change (NoC) to the existing (Amateur Primary) allocation in 47 - 47.2 GHz. Specifically, not to be considered for sharing with 5G International Mobile Telephony (IMT).

5 GHz WAS/RLAN: An IAP supported by 12 member states supports No Change (NoC) to the existing allocations in 5725 to 5850 MHz and 18 member states support No Change in the range 5850 to 5925 MHz (as opposed to using these frequency ranges for higher-power and outdoor wireless access points). The Amateur secondary allocation in Canada is 5650 to 5925 MHz.

WPT(EV): Wording in a Canadian contribution with additions from the American delegation has been added relative to a WRC-19 agenda item which seeks to identify frequencies for medium and high-power wireless charging of electric vehicles. The wording emphasizes the requirement to properly set standards to avoid harmful interference to radio services from WPT(EV) systems.

Note: The French proposal to consider 144 - 146 MHz for sharing with the aeronautical mobile service was not on the CITEL agenda. It will be considered next in a CEPT meeting in Ankara in late August. For more information please visit: <https://www.rac.ca/2-metre-sharing-proposal-is-on-cept-conference-preparatory-group-agenda/>

This was the last CITEL meeting before the upcoming WRC-19 Conference; therefore, the above is a fair representation of the status of the various Amateur issues going into that meeting.

Stay tuned to the WRC-19 webpage on the RAC website for more updates.

~ Bryan Rawlings, VE3QN
Special Advisor to World Radiocommunication
Conferences

Update on Two Metres Sharing Proposal Countdown to World Radiocommunication Conference 2019

<https://www.rac.ca/update-on-two-metres-sharing-proposal/>

There has been a concern - understandably - in the Amateur community over a proposal made by France to study reallocating 144 - 146 MHz to the aeronautical navigation service at a World Radiocommunication Conference, likely in 2023, to accommodate the growing number of aircraft employing new navigation tracking and communication aids.

At the meeting of the Conference Preparatory Group of the Conseil Européen des Postes et Radiocommunication (CEPT) - which concluded on August 30 in Ankara, Turkey - France modified its proposal that the International Telecommunication Union (ITU) study several frequency segments for sharing with the Aeronautical Mobile Service and withdrew the 144 to 146 MHz segment from the proposal. This welcome development was the result of an energetic and professional representation by delegates from the International Amateur Radio Union (IARU).

Several other issues which will be considered in the upcoming World Radiocommunication Conference and impacting Amateur Radio were also decided at the CEPT meeting and these are addressed in the news bulletin issued by Region 1 of the IARU and which is provided below.

CEPT CPG finalizes its positions for WRC-19

<http://www.iaru.org/news-events/cept-cpg-finalizes-its-positions-for-wrc-19>

"The CEPT Conference Preparatory Group met this week in Ankara, Turkey. Items of interest to the Amateur Service which were finalized were:

- Agreement to a European Common Proposal (ECP) on allocating 50-52 MHz to the Amateur Service in Region 1 on a secondary basis with a footnote listing those countries where the Amateur Service will have a primary allocation in the band 50-50.5 MHz (WRC Agenda Item 1.1)

- Agreement to an ECP on spectrum to be considered for International Mobile Telecommunications, which does not now include the primary Amateur band at 47-47.2 GHz (WRC Agenda Item 1.13)
- Agreement to an ECP that retains the current regulatory position in the 5725-5850 MHz frequency band which includes secondary allocations to the Amateur Service and the Amateur Satellite Service (WRC Agenda Item 1.16)
- Removal of 144-146 MHz from a French proposal for study of additional spectrum for aeronautical applications. (WRC Agenda Item 10)
- At the insistence of the European Commission, a WRC-23 agenda item was considered necessary to address the worldwide protection of Regional Navigational Satellite Systems from Amateur emissions in the band 1240-1300 MHz. A draft WRC Resolution was agreed which underlines the importance of this frequency band to the Amateur Service and explicitly excludes the removal of existing allocations as part of the proposed agenda item. (WRC Agenda Item 10)
- There was no change to the already agreed CEPT position on Wireless Power Transmission (WRC Agenda item 9.1.6). This states that no change is needed in the Radio Regulations to address the question of operating frequency for WPT-EV, but leaves open the question of spurious emissions from WPT-EV.

Commenting on the outcome of CPG, IARU Region 1 President Don Beattie, G3BJ, said that the IARU team at Ankara (the only representatives of the Amateur Service at the meeting) had presented clear and convincing arguments for the Amateur Service position and he was pleased that regulators had recognized the strength of the Amateur case. He expressed his thanks to everyone who had contributed to the outcome at CPG.

The issues now move to the World Radiocommunication Conference in Egypt in November for final resolution. The IARU will be there.”

Closing Comments

These developments, highlighted by the threat to our two-metre band worldwide, draw attention once again to the important role being played by dedicated Radio Amateurs throughout the world working through the IARU as well as on the delegations of numerous ITU national delegations - including Canada's - and who are helping ensure that the Amateur Radio Service as we know it will continue to survive and thrive.

Stay tuned for additional information about the upcoming World Radiocommunication Conference in the September-October 2019 issue of *The Canadian Amateur* magazine, on the RAC website and in social media using #RACatWRC19.

~ *Bryan Rawlings, VE3QN*
Special Advisor to World Radiocommunication Conferences
Radio Amateurs of Canada

The link below is a YouTube clip on the false alarm from the Ham radio system in Hawaii. They talk about the false alert and the reported nuclear threat, but what ever the disaster I think our response will be the same. IHMO, Its work a look. 73, Don VA7GL

<https://www.youtube.com/watch?v=dO09aMGMizM&t=200s>

Major US Contest Station, Winlink Support Mexico Fire Response

In May, Mexican radio amateurs provided message communications from a conflagration in a remote area to civil protection authorities in Monterrey, Mexico. Two-member teams of volunteer operators were flown in via helicopter. Teams used Winlink connections with Winlink Express software using the weak-signal protocol Vara HF.

A significant factor in this effort was the assistance and support of retired US contest operator and station, Tom Whiteside, N5TW, who dedicates his station to disaster response support using Winlink. His station in Georgetown, Texas, supported the effort from across the border with his 40- and 20-meter arrays. The volunteer teams at the fire site used a 40-meter dipole and a steerable portable dipole.

In addition to the Monterrey fire, Whiteside's station supported the International Health Service effort in Honduras and was the main link for the ARRL's effort in Puerto Rico in 2017 following the calamitous hurricanes there. Whiteside has served as the ARRL Section Emergency Coordinator for the South Texas section from 2009 through 2012 and continues as an assistant SEC. He is also a member of DHS NCC SHARES.

Whiteside maintains a major antenna farm and operates a Winlink HF Trimode station (PACTOR, ARDOP, Vara and WINMOR) and three VHF RMS Packet stations.

ITU/IARU, Telecoms' Winlink Initiative Bears Fruit in Fire Response

In 2018, ITU teamed up with regional telecommunications bodies in the Americas and the International Amateur Radio Union (IARU) to set up Winlink as an alternative telecommunication system for use in times of emergencies. Winlink is a worldwide email service that uses radio pathways and can operate completely without the Internet. Winlink served well for this fire response, and has a proven track record of disaster relief communications, providing its users email with attachments, position reporting, weather and information bulletins.

The main takeaway for me from this incident response was the example of the bridge between the amateur disaster response communications community and the "Big Gun" contest community.

~ *K1CE*

QRT

A New Season

John Brodie VA7XB

With the start of a fresh Amateur Radio season, I want to share some thoughts about the coming year. Throughout this newsletter you will find references to meetings, contests and other SARC events ahead, but you may have a personal radio-related goal that you might consider as your own. Here are 8 suggestions:

Build something. This is part of the ham radio tradition. Nowadays, things are easier to build, with the variety of kits available from the Internet and your local electronics retailer. For example, there's a large collection of worthwhile projects in past Communicators. Have a look via our blog site: <https://ve7sar.blogspot.ca> Soldering is a skill that all hams should have. Many simple home-made antennas are

described in The Communicator, handbooks, magazines and on the Internet and work well - try building one.

Learn CW. A large variety of learning and skill-enhancing programs are out there on the Internet, mostly free. For example:

<http://www..qsl.net/zl1an/Software/teach4software.html>

or this one:

<http://www.g4fon.net/CW%20Trainer.htm>

Morse Trainer both recommended by John VE7AXU. If you already know Morse Code and simply wish to improve your skill, my personal favourite for simulating contest conditions is: Morse Runner:

”

*Kevin McQuiggin
VE7ZD has also
offered to instruct a
CW course if
sufficient members
are interested..*

SARC Antenna Workshop



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2019-2020

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[http://www.dxatlas.com/download.as](http://www.dxatlas.com/download.asp)

[p](http://www.dxatlas.com/download.asp) Kevin McQuiggin VE7ZD has also offered to instruct a CW course if sufficient members are interested.

Master a new technical skill: pick a subject that interests you and read up on it. How about antenna modeling, or propagation prediction, or impedance matching? Then give a talk to SARC about what you have learned. You could even dig out your radio manual and read it from cover to cover, trying out everything that is described so that you master its complexities (you never know when you might need to program your radio on the fly, should disaster occur and you are called upon).

Help a ham in need: think about your fellow hams and who might need a helping hand (for example) to erect an antenna, or work through difficult software, install power poles etc. Possibly you could offer to give a lift to the next SARC meeting or breakfast get-together for one of our handicapped members.

Get someone interested in ham radio: bring him/her out to a SARC meeting and introduce him to the group. Direct him/her to some ham radio literature and show off your station. Offer to give a talk at your local Senior Citizens centre, Scout hall or service club. Explain the benefits of ham radio if there is ever an emergency where power, telephone and Internet are not working.

Suggest a worthwhile project or event for your group and volunteer to organize it. Don't just leave it to the Executive to do all the thinking.

Pursue some new aspect of your hobby. If FM on VHF/UHF is all you've ever done, there is a world of interesting options open to you. Explore new bands or modes. If you're in an apartment or townhouse complex and have been unable to get on HF, think about the digital modes. With most modes, you only need simple equipment, 20 or 30 watts of power and a modest antenna. All exchanges are done on the keyboard using software that is mostly free. Or maybe contesting holds some interest for you. If so, let your Exec know that you want to join the ever-growing number of members who are involved in the contesting program.

Set an achievable goal and earn it: This could be Worked All States or DX Century Club. Maybe improve your score by X% in your favourite contest, or get your CW speed up to 20 WPM. Improve your Fox Hunting skills so that you can find at least 3 foxes instead of the usual one. Work 10 new countries on the lower HF bands. Find out how to get on Logbook of the World and do it.

~ John VA7XB

Photo shows proud papa Ion Marinescu VA7ION congratulating his 13 yr old son, Jean-Luc VA7JLU upon achieving 93% on the basic exam.





September and October

September is the month when it all starts up again. At SARC we have a new Executive and they are planning an interesting meeting schedule.

Please note that we will now be meeting at the Surrey Fire Service Training Centre, a beautiful new facility at 14923 - 64 Avenue, Surrey, BC. Here is a what3words locator:

<https://what3words.com/markers.addiction.ozone>

See you on Wednesday, September 11 and October 9 at 7pm

SARC hosts an Amateur Radio net each Tuesday evening at 8 PM. Please tune in to the VE7RSC repeater at 147.360 MHz (+600 KHz) Tone=110.9, also accessible on IRLP node 1736 and Echolink node 496228.

On UHF we operate a repeater on 443.775MHz (+5Mhz) Tone=110.9 or IRLP Node 1737.

	SARC Net 20:00 Hrs
1 st Tuesday Standby	Drew VA7DRW Dixie VA7DIX
2 nd Tuesday Standby	Jinty VA7JMR Sheldon VA7XNL
3 rd Tuesday Standby	Rob VE7CZV Vacant
4 th Tuesday Standby	Kapila VE7KGK John VA7XB
5 th Tuesday Standby	Robert VA7FMR John VE7TI
Want a turn at Net Control? Contact the SARC Net Manager	

Down The Log...

SARC Monthly Meetings

2nd Wed. (Sept-Jun)
1900 hr at the [Surrey Fire Service Training Centre](#),
14923 - 64 Avenue,
Surrey, BC

Weekly SARC Social

Saturday between 0800
and 1000 hrs at the
Kalmar Family Restaurant
8076 King George Blvd.
Surrey

SARC Net

Tuesday at 2000 hr local
on 147.360 MHz (+)
Tone=110.9

SEPARS Net

Tuesday at 1930 hr local
on 147.360 MHz (+)
Tone=110.9

VE7RSC Repeaters

2m: 147.360 MHz +
Tone = 110.9 Hz
IRLP node 1736
Echolink node 496228

1.2m: 223.960 Mhz -1.6
Tone=110.9

70cm: 443.775 MHz +
Tone = 110.9 Hz
IRLP node 1737



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